ENVIRONMENTAL HEALTH PROJECT

Report for the File 451

Village Water and Sanitation Program Institutional and Financial Assessment Study for Establishing Joint Services Councils (JSC) within Selected Communities in Nablus and Hebron Governorates

A study conducted For the Environmental Health Project II (EHP)

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Prepared by

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VILLAGE WATER AND SANITATION PROGRAM

INSTITUTIONAL AND FINANCIAL ASSESSMENT STUDY for establishing JOINT SERVICES COUNCILS (JSC) WITHIN SELECTED COMMUNITIES IN NABLUS AND HEBRON GOVERNORATES

A STUDY CONDUCTED FOR THE ENVIRONMENTAL HEALTH PROJECT II (EHP) CONTRACT NO. HRN-I- 00-99-00011-00 FUNDED BY USAID/WEST BANK & GAZA MISSION

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Abbreviations

ANERA	American Near East Refugee Aid
CCE	Center for Continuing Education, a BirZeit University data collection and analysis center
CDM	Camp Dresser & McKee International, Inc.
CPA	Certified Public Accounting
GEKA	Generale des Eaux, Khatib & Alami
JSC	Joint Services Council
JWU	Jerusalem Water Undertaking
L/c/d	Liters per capita per day
MLG	Ministry of Local Government
MoE	Ministry of the Environment
NGO	Non-Governmental Organization
PA	Palestinian Authority
PLC	Palestinian Legislative Council
PWA	Palestinian Water Authority
PCBS	Palestinian Central Bureau of Statistics
SPSS	Statistical Package for Social Services (a data analysis software)
VAT	Value Added Tax
VWS	Village Water and Sanitation Program
WBWD	West Bank Water Department

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EXECUTIVE SUMMARY

This assessment study, commissioned by the Environmental Health Project (EHP) and carried out by American Near East Refugee Aid (ANERA), details the institutional and financial feasibility of establishing a set of Joint Services Councils (JSC) for water and wastewater in the West Bank governorates of Nablus and Hebron. The proposed project is designed to provide safe and sustainable water and sanitation services to rural communities in the West Bank and is a component of the USAID Village Water and Sanitation Program (VWS). The VWS project is coordinated with USAID's Strategic Objective 2 – "Greater Access to and More Effective Use of Scarce Water Resources."

The EHP team, under contract with USAID, conducted three studies to address both the engineering feasibility and the non-engineering aspects of a successful VWS program in the West Bank governorates. The EHP subcontracted ANERA to conduct a study to determine the feasibility of establishing JSCs within the relevant area of the new VWS project, in light of ANERA's successful experience in setting up the Jenin JSC two years ago.

ANERA's assessment concerns a variety of important and related issues including local organization, infrastructure, governance, geographical location and established patterns of water and sanitation systems use.

Some of the general findings from the study are as follows:

- Despite significant variation in the infrastructure, economy and population of the four clusters designated for the purposes of this study, the representatives of all four clusters expressed strong support for establishing JSCs.

- The village councils are currently responsible for managing the existing water networks within their villages. The proposed JSCs would have to assume responsibility for the management of the new water networks for the foreseeable future. None of the village councils in the two governorates expressed any objection to having the JSC take over such a management function.

- The Palestinian Water Authority (PWA) and the Ministry of Local Government (MLG) have expressed support for the establishment of JSCs. Both the PWA and the MLG envisage their role as either observers or advisors to the JSC Board of Directors, which is consistent with the views of the village councils.

- At present there are no existing public sanitation systems (i.e. wastewater collection systems) within the selected villages in the Nablus and Hebron governorates (except for cesspits at the level of the individual household or other buildings, such as a school or clinic).

- Some of the features characteristic of the communities that have existing water systems include the debts that are accumulating from non-payment for bulk water by the village/town councils.

Some of the specific findings in the four clusters are outlined as follows:

- Both of the designated clusters in Nablus governorate clearly lack any proper piped water supply system and their residents depend heavily on their supply of water through collection wells (i.e. cisterns), local springs, and water tankers. Neither of the Nablus clusters has significant human, physical or managerial resources that could be incorporated in the establishment of the JSC. A considerable amount of training in human resources will be necessary to set up the JSCs in Nablus.

- Within the two designated Hebron clusters, there was a wide variation in the size, past experience in managing water supply systems, and available resources. In the Hebron Northwest cluster, four of the eight communities are municipalities with relatively large populations and seven of them have water networks, one of which has been recently constructed. The communities generally do not complain about the supply of water. They have potential human resources that can be incorporated in the establishment of the JSC, provided relevant training is provided. However, most of these communities lack appropriate managerial skills.

- By contrast to the Hebron Northwest cluster, three of the seventeen communities in the Hebron Southwest cluster are municipalities with relatively large populations and have some form of water networks that are generally very old and inadequately sized, to the extent that they hardly get any water through these networks. The human resources that are found there are fairly young and lack the proper experience. Management of the water networks is centralized within the village councils and is done in the traditional way.

The report recommends that two JSCs be established in Hebron and that one JSC be established in Nablus, combining both clusters that were assessed in this study. The establishment of a JSC in Nablus is dependent, however, on the availability of an adequate supply of water from the Rujeib Well.

Residents in both the Hebron clusters have some experience in operating water distribution networks. However, it will be necessary to investigate more closely, from a technical point of view, the conditions of the existing networks. The existing capabilities in terms of human resources within the individual village/town councils may be incorporated within the proposed JSCs, provided that the proper training is provided.

Regarding the format of this study, Chapters Four through Seven outline the findings and general recommendations for each cluster, respectively. The chapters are divided into two main sections that describe the general institutional as well as the financial assessment findings of the proposed JSC. The institutional section covers five main topics relating to the institutional viability of the JSC: the feasibility, governance, existing capacities and

systems in place; water sector issues; public consultation; and participation within each cluster. The financial section is divided into tariff policies and subsidies, issues relating to the local markets and financial viability of each cluster. The detailed analysis of these issues can be found in the annexes, which correspond in number and layout to each chapter.

Chapter 1: INTRODUCTION

SUMMARY

- To address chronic local water shortages and unhygienic waste disposal methods, ANERA has been commissioned to conduct this institutional assessment study for the establishment of an appropriate institution to manage water and sanitation networks in selected villages/towns within the governorates of Nablus and Hebron, in cooperation with BirZeit University through the Environmental Health Project (EHP), funded by USAID.
- The identified municipalities and village councils will cooperate together in the context of Joint Services Councils (JSC) to supply water and sanitation services to their communities.
- A successful prototype of this project in Jenin governorate, executed two years ago, provided household water connections for the first time to 40,000 people in eleven small towns, and provided improved septic systems to over 1,000 people.

Introduction and Objectives

The Village Water and Sanitation (VWS) Program is designed to provide safe and sustainable water and public sanitation services to rural communities in the West Bank.

This program is coordinated with USAID's Strategic Objective 2 – "Greater Access to and More Effective Use of Scarce Water Resources". The VWS will work in two West Bank regions: the Western Slopes area, to the north and west of Hebron; and areas to the south and east of Nablus. The total estimated population planned to be served in West Hebron is roughly 80,000 and in the Nablus area is 52,000. The project is expected to serve a total of forty-seven (47) villages.

There are three main components to the VWS project:

- institutional development;
- environmental health; and
- technical engineering design

Each of the three components includes an assessment study that precedes the design and implementation phase. This assessment study is concerned with the first component***: institutional development.***

THE OVERALL SCOPE OF THIS PROJEC
USAID'S WEST BANK/GAZA MISSION, WHICH ISSUED THREE WORK ORDERS TO THE ENVIRONMENTAL HEALTH PROJECT. TASK ORDER 1 WAS AN ENGINEERING FEASIBILITY STUDY. TASK ORDER 2, ENVIRONMENTAL HEALTH AND INSTITUTIONAL DEVELOPMENT, CONSISTED OF THREE STUDIES WHICH ADDRESSED THE NON-ENGINEERING ISSUES OF THE VWS PROGRAM. THE THREE STUDIES ARE: 1) AN ASSESSMENT OF THE INSTITUTIONAL AND FINANCIAL FEASIBILITY OF ESTABLISHING JSCS WITHIN THE PROPOSED CLUSTERS OF VILLAGES, WHICH IS DETAILED IN THIS STUDY AND CONDUCTED BY ANERA; 2)

A HOUSEHOLD ENVIRONMENTAL HEALTH STUDY RELATED TO WATER AND SANITATION USE, AND CONDUCTED BY SAVE THE CHILDREN; 3) A WASTE WATER REUSE STUDY CONDUCTED BY THE EHP TEAM. TASK ORDER 3 IS THE FOR DETAILED ENGINEERING DESIGNS.

THE EHP TEAM CONTRACTED AMERICAN NEAR EAST REFUGEE AID (ANERA) TO CONDUCT THE ASSESSMENT STUDY OF THE INSTITUTIONAL AND FINANCIAL FEASIBILITY OF ESTABLISHING JOINT SERVICES COUNCILS (JSCS) WITHIN THE CLUSTER OF VILLAGES IDENTIFIED FOR THE VWS PROJECT. THE JSCS ARE AN INTEGRAL PART OF THE SUCCESS OF THE VWS, AND ANERA'S EXPERIENCE WITH SIMILAR INSTITUTIONAL MODELS PROVED TO BE RELEVANT TO THIS WORK. THE CONTRACT BETWEEN ANERA AND THE EHP FOR THE FEASIBILITY STUDY WAS SIGNED ON NOVEMBER 13, 2001.

The assessment of the JSCs in relation to the overall VWS program concerns a variety of important and related issues including local social organization, infrastructure, governance, geographical location and established patterns of water and sanitation systems use. The scope of ANERA's study is divided into two main parts: assessment of the institutional requirements for establishing the JSCs; and assessment of the financial requirements for establishing the JSCs.

Feasibility Assessment Study Objectives

This assessment study determines the institutional and financial feasibility of establishing Joint Services Councils within the clusters of villages identified in the Village Water and Sanitation Program. The study targets a set of four clusters, two in the governorate of Hebron and two in the governorate of Nablus.

The purpose of this study is to establish the institutional and financial requirements for setting up Joint Services Councils. The objectives may be summarized as follows:

- Determine the receptivity of the villages to participate in the JSCs;
- Determine the feasibility of establishing the JSCs;
- Assess the financial implications of the Village Water and Sanitation Project;
- Determine existing resources;

- Evaluate pricing systems currently in place for water and sanitation services; and
- Determine existing administrative and operational facilities for the provision of water and sewerage services.

USAID is investing considerable financial and technical resources in the water and sanitation infrastructure in the West Bank and Gaza. Most of these efforts have focused on increasing the water supply to major urban areas (Hebron, Gaza, and Bethlehem). A successful village water project in the Jenin governorate provided household water connections for the first time to 44,000 people in eleven villages and towns in Jenin western district, and also provided improved septic systems to over one thousand people there.

The "Jenin Villages" project is the primary model for the current VWS. Essential elements of the project included public awareness efforts accomplished through working with the schools, women's groups, mosques, and other community groups on health, hygiene, and water management, in addition to working with the municipalities and local village councils to establish the first Palestinian Joint Services Council for water and wastewater. Over 80% of potential households are currently hooked up to the system and revenues have been consistent with and on schedule toward attaining full cost recovery.

Infrastructure Support

A major element of USAID's continuing work in water infrastructure is the construction of new wells and a water transmission line that will encircle Hebron. A large reservoir was built in Halhul, north of Hebron. USAID's Water Resources Program (Phase 3), has contracted with CH2MHILL to build trunk lines from the storage facility to municipal water tanks.

A water well in Rujeib is scheduled to be drilled in March 2002 and is expected to provide water supply for the villages in the two Nablus Clusters (with the exception of two communities of Beit Dajan and Beit Furik, which will be supplied from an independent source according to the technical feasibility study conducted in conjunction with the VWS program).

The EHP will implement the village distribution networks for the current VWS program in
the West Hebron Villages, as well as in the Nablus villages (contingent upon the availability of sufficient water quantities from the Rujeib well).

The following communities have been selected for the implementation of the VWS program, consisting of two governorates broken down into two clusters, with the number of villages in each cluster ranging between 8 and 17.

Nablus Clusters:

1. **Nablus Central Cluster (12 villages):** This cluster of villages includes the following: Burin, Madama, Asira al-Qibliya, Burin, Til, Sarra, Urif, Rujeib, Beit Dajan, Beit Furik, Awarta and Einabus.
2. **Nablus Southeast Cluster (10 villages):** This cluster of villages includes the following: Aqraba, Yanun, Usarin, Jurish, Qusra, Qaryut, Talfit, Jalud, Majdel Bani Fadel and Duma.

The total estimated population of the two clusters is around 52,000 (according to the

Conclusion

This assessment study provides the information and analysis necessary to design the institutional and financial component of the VWS. The results of this assessment study will be used to develop the scope of work (SOW) for the design and implementation in establishing the proposed JSCs. Under the overall direction of the EHP team, the subcontractor for the design and implementation phase will use the assessment study report to plan and implement the establishment of the proposed JSCs.

This report summarizes the information collected, major findings, and recommendations for establishing the JSCs. Included in this are the recommendations needed to develop and design the implementation phase of setting up the Joint Services Councils. The report is structured so that the findings and recommendations are included in the main text, while the more detailed analysis, presentation of data and statistical support are included in the annexes.

Chapter 2: *JOINT SERVICES COUNCILS*

The establishment of Joint Service Councils in designated clusters of rural communities will result in institutions that connect rural households to water (and to waste disposal systems in the future) in return for payment by participating households for these services. Consumers will pay fees to the JSC, and the JSC in return will be responsible for delivery, services, repairs and maintenance of the water distribution system.

A successful experiment, using the JCS model, was funded by USAID for developing water and sanitation infrastructure and carried out in Jenin Western District two years ago. In that program, households in small towns and villages (eleven in total) were connected to water sources for the first time, bringing 44,000 people (80% of potential households) a reliable supply of water. Improved septic systems were made available to over 1,000 people.

Description

The Joint Services Councils are local entities with governing boards that are characterized by:

- Transparent management systems for finance and infrastructure;
- The full participation and support of local communities;
- Coordination with regional and larger institutions for managing shared resources (in this case, the supply of water) and technical services.

JSCs are private, registered, non-profit, self-supporting, independent legal bodies formed to manage the newly installed water and sanitation system within the proposed clusters. The JSCs have the power to collect fees, settle disputes, obtain credit, enter into contracts, and invest funds for the improvement and expansion of the water and sanitation systems. The JSC manages the day-to-day operations of the water supply distribution and sanitation systems. The JSC operates and maintains the system, is responsible for billings and collections, and can enter into contracts for services. The system of establishing and managing a JSC should be financially self-sustaining.

Background

Joint Services Councils were established following the passing of the Law of Local Entities by the Palestinian Legislative Council (PLC) in October 1997 on behalf of the Ministry of Local Government. That law calls for the establishment of Joint Services Councils among groups of municipalities, village councils and local projects committees for the purpose of providing a specific service such as water and waste water, slaughterhouses, cemeteries, wholesale markets, etc. The JSC that was set up for the Jenin western district was the first JSC to be established under this law, for water and sanitation. The Ministry of Local Government aims at achieving the supply of services to the local communities in a decentralized and more efficient manner, making the new entities (i.e. JSCs) directly accountable for the specific service they provide, and for facilitating the MoLG's intervention as needed to rectify any suspected malpractice in any of the JSCs. By law, the JSC should be designed in such a way as to ensure cost effectiveness, transparency and full accountability for the services they provide.

The JSC consists of a Board of Directors and full-time staff responsible for day-to-day operations. The Board of Directors is composed of democratically elected representatives from each municipality and village council served by the water distribution and sanitation system. An executive director manages the day-to-day operations of the water distribution and sanitation systems. The board members will set up the JSC offices and hire the executive director. The executive director will in turn initiate the process of hiring the administrative, financial and technical staff for the management of JSC in the proposed villages.

The JSCs for water and sanitation are registered entities with the Ministry of Local Government, and must also comply with Palestinian Water Authority (PWA) regulations. In order to ensure compliance with water regulations, the PWA will have one representative on the boards of these JSCs. The Ministry of Local Government will supervise and issue the license for registration of the Joint Services Councils. The Ministry of Local Government will also have a representative on the board of the JSCs in order to ensure compliance with public administrative regulations.

PWA envisages that the JSCs will eventually be merged into the Water Utilities organizational structure that is being planned by the Palestinian Water Authority for the northern, middle and southern areas of the West Bank, once they are established and become fully operational. (This is one of the set of cross-cutting issues which are further discussed in Chapter 8).

Governance

Through democratic elections that are to be held in each village council or municipality, one or more representatives from each community will be elected to become members in the JSC Board of Directors. The JSC Board of Directors will create its own by-laws on the basis of relevant laws passed by the Ministry of Local Government.

Structure

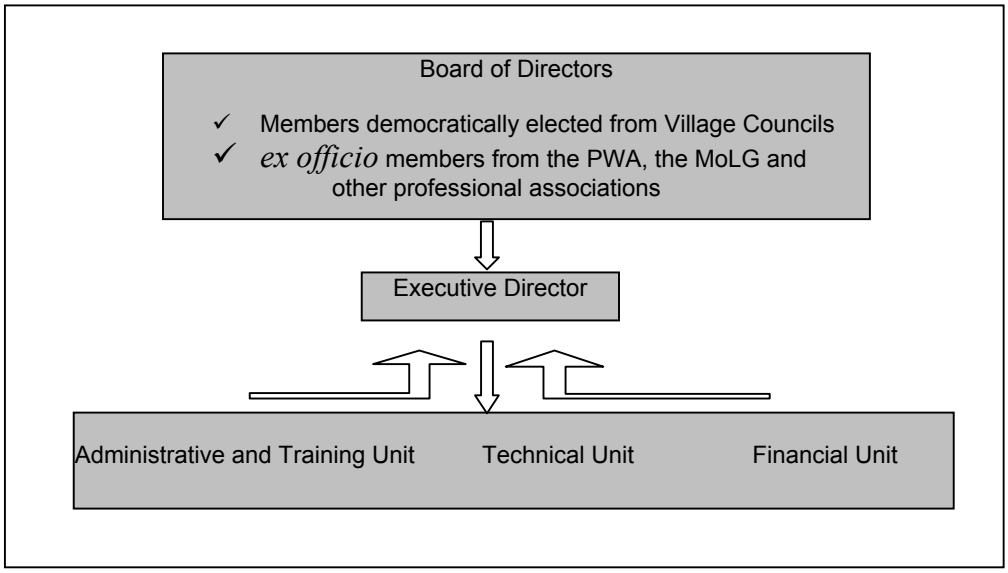
The JSC Board of Directors will appoint an executive director, through a competitive job selection process, to administer the JSC activities, which are carried out through the three units forming the JSC: an administrative and training unit; a financial unit; and a technical unit. The executive director will recommend to the Board of Directors the appointment of the executive staff of the JSCs, who will also be selected through a competitive process. In turn, the Board of Directors will elect, from among its members, a chairman, a treasurer and a secretary for the board. Other persons from the PWA, the MoLG, the MoE and professional associations may also be represented on the Board of Directors as *ex officio* members**.**

The main responsibility of the Board of Directors is to appoint the executive director, monitor the operations of the management units, and decide on the price of water in coordination with the PWA. The last-mentioned task is considered to be one of the most important functions of the Board of Directors. The price to the consumer must be fair and, at the same time, must also achieve the goal of water conservation and sustainable

management of the JSC. Water prices will ultimately have a bearing on controlling water demand for all the users in the proposed clusters of villages.

The overall structure of the proposed Joint Service Council is as shown below. Note that this is an illustrative structure and that the structure can be changed to suit new needs and circumstances.

Illustrative Joint Service Council Structure



A proposed set of ***operative units*** can be outlined below, based on the actual experience of the Jenin JSC model. However, the final decision for the formation of the operative units is for the Board of Directors to make.

The ***Technical Unit*** would be assigned the following responsibilities:

- Maintaining the water and sanitation lines and repairing any breakages;
- Maintaining water use efficiency by minimizing water losses due to leakages and seepage in the networks (in other words, minimizing unaccounted for water, or UFW, defined as the quantity of water lost in the main conveyance pipes and water networks and not measured as consumed water);
- Reading water meters on a regular basis, and feeding the readings back to the administrative unit in order to prepare and issue the water consumption bills;
- Assisting in the collection of the water consumption bills from consumers;
- Replacing and/or repairing deficient water meters;
- Surveying applications for new water connections requested by new water subscribers;
- Maintaining the stores in an orderly condition;
- Making recommendations to the board regarding systems replacement; and
- Making recommendations to the board regarding systems expansion.

The ***Administration and Training Unit*** would correspondingly be tasked with the following:

- Issuing the water bills;
- Collecting the water bills;
- Accepting applications from new subscribers to the water network;
- Working with the executive director in the day-to-day administration of the JSC;
- Working with the executive director in implementing the decisions of the Board of Directors;
- Organizing the training of the JSC staff with outside institutions; and
- Organizing in-house training of the staff of other newly set-up JSCs.

The ***Finance Unit*** would be assigned the following responsibilities:

- Maintaining financial records of all the activities of the JSC;
- Preparing financial statements for the Board of Directors;
- Liaising with the appointed Certified Public Accountant (CPA) for the JSC; and
- Supervising the stores and maintaining a clear stock control over them.

Characteristics of the Joint Services Councils

The general characteristics of the JSC can be summarized as follows:

I. Legally Independent
- The JSC shall be established as a self-supporting independent legal body. It will operate, maintain and manage the water network under the guidance of the JSC Board of Directors. It will operate on a non-profit basis, but will take the necessary steps to recover all costs needed for operation, maintenance and repairs, systems replacement and expansion, and loan repayment.
- The JSC shall have a legal personality with the power to regulate and control the drinking water services, issue regulations, collect fees, settle disputes, obtain credit, enter into contracts, and invest funds in the improvement of the water system.
- The JSC shall adopt its own by-laws, based on the relevant law(s) passed by the Ministry of Local Government.
- The JSC shall maintain, develop and upgrade the water distribution system and its management and controls in good working condition and undertake to make any necessary repairs and rehabilitation.

II. Transparent
- The JSC shall keep daily/monthly/yearly records of its income and expenditures according to accepted accounting procedures.
- The JSC shall follow an up-to-date system for sustainability, transparency, accountability and democratic management. Accordingly, the JSCs will be

required to prepare and submit to the concerned bodies reports regarding their financial performance as prepared by a Certified Public Accountant. The JSC shall also have its books open for inspection by concerned officials.

III. Sensitive to the Environment and Health Needs

- The JSC will take the proper steps to follow the proper health standards and to avoid any misuse, including pollution of the environment. For this purpose, the JSC shall coordinate with the concerned environmental departments.
- The JSC will assist in public awareness campaigns advancing the beneficiaries' understanding and appreciation of environmental issues and standards.
- The JSC will also be responsible for raising public awareness, encouraging the use of water saving devices and other conservation measures, rationalizing water consumption, demand control, and environmental education for all water users.
- The JSC will focus on hygiene and health education through coordination with the appropriate authorities, engaging specialists and conducting workshops.

IV. Sensitive to Local Needs

- The Joint Services Council Boards will be formed from representatives elected by the respective Village Councils. The JSC Boards will change every two to five years, depending on their by-laws. The Boards will act as the facilitator and community leader before, during and after the completion of the implementation phases of the project. The Boards can greatly facilitate resolution of immediate issues such as payment of community contributions, as well as long-term issues, such as public awareness (health, water usage economy/conservation).

- The Joint Services Councils will take care of all internal problems arising among the various beneficiaries during the implementation phase. ANERA's experience in Jenin indicated that the council members were fully knowledgeable regarding the internal social and political dynamics within their communities and were most capable of resolving the issues as and when they arose.

- The establishment of the Joint Services Councils early in the implementation phase will strengthen its role and make it the focal point for the water users. The JSCs hence become empowered over the project when it is completed, which in turn will help ensure sustainability of the project as a whole.

- The Joint Services Councils will be established, staffed, trained and mobilized at a sufficiently early stage in the implementation phase so that they can be cognizant of the project details during the construction phase.

- The JSCs, through their Boards of Directors, shall involve the communities in decision-making, especially in areas of network expansion, systems replacement, resolving disputes over the right of way, etc.

Chapter 3: *METHODOLOGY*

The tool for data collection used to determine the institutional and financial feasibility of the JSCs was provided in the form of a series of questionnaires passed out to:

- ✓ the Municipal/Village Councils identified for the VWS program in Nablus and Hebron governorates (as the potential stakeholders of the project);
- ✓ the PWA and the MoLG, as the two main authorities responsible for setting regulatory policies for the water sector and local entities, respectively;
- ✓ the West Bank Water Department (WBWD), a PWA subsidiary responsible for the provision of bulk water to selected communities in the West Bank, including some villages in the impact area of the assessment study.

In developing the questionnaires, ANERA secured prior approval from EHP and USAID to engage the services of the Center for Continuing Education (CCE) of Birzeit University, which has experience in questionnaire design, data collection, field work and data analysis.

Representatives of the EHP, ANERA and CCE worked together in developing the sets of questionnaires. The Hebron Clusters (25 communities with a population totaling 78,281) were divided into the Hebron Northwest Cluster (8 communities with a population of 35,096) and the Hebron Southwest Cluster (17 communities with a population of 43,185). The Nablus Clusters (22 communities with a population totaling 51,970) were divided into the Nablus Central Cluster (12 communities with a population of 32,899) and the Nablus Southeast Cluster (10 communities with a population of 19,071). (All population figures are in accordance with the PCBS 1997 census).

The questionnaires were finalized and cleared with the EHP team on November 8, 2001. (A copy of the questionnaires is found in Annex 5.) The questionnaires targeted:

- Receptivity of the local community to establishing a JSC for the villages within its cluster;
- Local and practical issues to be addressed to ensure the feasibility of establishing the JSCs;
- The size of the market for water supply and sanitation services;
- The likely recurrent costs for each JSC and affordability in light of the tariff needed to recover all recurrent costs;
- The existing capacity in terms of human and physical resources that can be relied upon to establish a JSC;
- Overarching legal or policy constraints to be addressed; and
- The main institutional and financial risks of the Village Water and Sanitation Program and how they can be addressed.

CCE worked on the initial design of the sets of questionnaires. CCE was also responsible for the distribution, filling out, collection and analysis of the questionnaires that concerned the village councils within the four clusters. ANERA was responsible for the

distribution, completion, collection and analysis of the questionnaires pertaining to the Palestinian Water Authority, the Palestinian Ministry of Local Government (MoLG), and the West Bank Water Department (WBWD).

Data Collection from Village Councils

The data from the village councils was collected in three phases:

- Plenary sessions;
- Field visits; and
- Data collection and filling out the questionnaires.

The goals of the plenary sessions were to:

- Introduce the concept of Joint Services Councils to the participants;
- Familiarize the village council representatives with the background and context for the assessment study;
- Explain the purpose and objectives of the institutional and financial assessment to the representatives of the village councils;
- Review the questionnaires and ensure that the attending representatives would discuss them with their colleagues in the village councils;
- Prepare a time schedule for visiting each of the village councils on a one-to-one basis to fill out the questionnaires and verify the existence of the physical assets.

(Lists of participants in the plenary sessions are included in Annex 7.)

The plenary sessions were jointly carried out by ANERA and CCE. During the sessions, two copies of the VC questionnaires were handed to each representative to take home in order to allow them to meet with their village councilors and prepare the answers for the questions, in preparation for the CCE field researcher's visit to assist them in providing the answers to the full questionnaire. The questionnaires were then collected by CCE and handed over to the CCE team leaders in both governorates.

Two teams, composed of two consultants and four field staff, were mobilized in each of the two governorates. Their main task was to attend plenary sessions with the local communities and to conduct the one-to-one field visits to each of the village councils within the four clusters and assist them in filling out the questionnaires.

The field work started with the holding of two plenary sessions with the village councils. The first plenary session was held jointly for the two Nablus clusters, on November 19, 2001. Representatives of fifteen village councils attended the meeting in addition to a representative from the EHP team. Ten village councils could not attend the meeting due to the Israeli closure imposed on and around their areas. Some village councils were represented by more than one person. No representative of the PWA, MoLG, or MoE attended the plenary session.

The second plenary session was conducted for the two Hebron clusters on November 22, 2001. Representatives of twelve village councils attended the meeting in addition to a representative from the EHP team, Halhul municipality, the PWA, the MoLG and the

MOE. Some village councils were represented by more than one person. Ten village councils could not attend the meeting due to the Israeli closures imposed on and around their areas. The reason behind grouping the villages in the two clusters in one plenary session was due to the difficulties on the ground in terms of movement imposed by Israeli closures of the different areas. In both plenary sessions, a representative of the EHP team attended.

The teams met frequently with the heads and members of the village councils to assess their
views, answer queries and help them answer the questionnaires. The field workers shared with the CCE team leaders their knowledge about the various localities.

Data collection started on November 20, 2001 in the Nablus clusters, and on November 22, 2001 in the Hebron clusters. Data collection lasted till November 28, 2001 in all clusters, at which point all the questionnaires were collected by CCE.

Data Collection from the PWA, MoLG and WBWD

Data was collected through interviews with the following:

- Interview with the acting Deputy Head of the PWA, Dr. Ihab Barghoutti was held on November 5, 2001. The questionnaire was later filled out and dispatched by fax to ANERA.
- Interview with Deputy Minister of Local Government, Dr. Hussein Al-A'raj was held over the phone and the completed questionnaire was returned by fax to ANERA. Dr. Al-A'raj resides in the Jenin area and it was extremely difficult to meet him face-to-face because of closures of the areas.
- Interview with Mr. Taher Nasser Eddin, Head of WBWD, took place on November 25, 2001. The questionnaires were filled in and later dispatched by fax to ANERA.

Data Analysis

The collected data in all of the questionnaires was analyzed using SPSS software. As for the financial analysis, a financial model was constructed using Microsoft Excel. This financial model has been based on the following:

i. Capital investment and operating expenses related to the JSC were obtained from the Jenin JSC model.
ii. Construction and maintenance costs of the water distribution system were obtained from the technical feasibility study conducted by the EHP team.
iii. Data on the population size and trends were extrapolated from the PCBS records.
iv. Information on current market was cross-checked with a set of preliminary results of the household environmental health study.

The annexes present raw data that is the outcome of the analysis of the village council questionnaires, using SPSS. Certain inconsistencies in the presented data were found, mainly resulting from village council representatives mistakenly quoting unrealistic figures in response to the questionnaire. This is mainly due to lack of proper information

with the village councils. Such examples include the cost for constructing a water cistern (the cost for constructing a 40-80m³ cistern was quoted by the village council representative as NIS 2000 in the Nablus Southeast cluster, whereas the more realistic figure that represents the actual cost and has been used in the report is NIS 5000). This is also true for the daily water consumption (the average daily per capita consumption in the Hebron Northwest cluster was quoted as 14 l/c/d, whereas the more realistic figure of 60 l/c/d has been used based on information obtained from PWA).

Difficulties encountered in Data Collection

The Nablus region (particularly the Nablus Southeast cluster) presented particular challenges as field researchers had to go through the Til Junction, which was then under curfew, thus causing a delay in the work of the field researchers. However, with ANERA's ID cards issued to the teams in the fields, the work and mobility in the field was facilitated in a manner that allowed the field workers to fulfill their duties. By contrast, movement was easier in the Hebron Clusters, as there were fewer restrictions and the field researchers came from areas near the targeted clusters.

Chapter 4: *Nablus Central Cluster*

Geographical Location:	Cluster of communities lying in the central region of the Governorate of Nablus
Communities Included:	This cluster constitutes of 12 communities: Burin (2,424), Madama (1,223), 'Asira al-Qibliyah (1,686), 'Iraq Burin (576), Til (3,496), Sarra (2,133), Urif (2,094), Rujeib (2,888), Beit Dajan (2,682), Beit Furik (7,774), Awarta (4,286), and Einabus (1,637).
Total Population:	32,899 (according to the PCBS census of 1997)

General Cluster Description:

THE ABOVE CLUSTER OF VILLAGES IS GEOGRAPHICALLY DIVIDED INTO TWO PARTS. THE FIRST PART INCLUDES BURIN, MADAMA, 'ASIRA AL-QIBLYHA, 'IRAQ BURIN, TIL, SARRA, AND URIF AND IS LOCATED 3 TO 5 KM TO THE SOUTH OF NABLUS CITY. THE SECOND PART INCLUDES BEIT FURIK, AWARTA, RUJEIB, AND BEIT DAJAN AND IS LOCATED WITHIN THE EASTERN PART OF NABLUS GOVERNORATE. VILLAGES IN THIS CLUSTER HAVE A TOTAL POPULATION OF 32,899 AS PER THE PCBS CENSUS OF 1997.

THE ECONOMY OF THESE VILLAGES IS PREDOMINANTLY DEPENDENT ON AGRICULTURE IN ADDITION TO SOME SMALL-SCALE, UNDERDEVELOPED ENTERPRISES. THE VILLAGES ARE MANAGED BY LOCAL VILLAGE COUNCILS, WHICH PROVIDE THEM WITH SOME BASIC SERVICES, SUCH AS ROADS, ELECTRICITY, SOLID WASTE DISPOSAL, SCHOOL BUILDING, ETC. PART OF THIS CLUSTER INCLUDES SEVEN VILLAGES: BURIN, MADAMA, 'ASIRA AL-QIBLYHA, 'IRAQ BURIN, TIL, SARRA, AND URIF) THAT, TWO YEARS AGO, ESTABLISHED A JOINT SERVICES COUNCIL FOR THE SUPPLY OF WATER TO THESE VILLAGES. THE JAPANESE

GOVERNMENT FUNDED THE PROJECT THROUGH THE PWA, BUT IT HAS NOT BEEN IMPLEMENTED. THIS IS THE CLOSEST ENCOUNTER THESE VILLAGES EVER HAD WITH THE CONCEPT OF JSC, BUT IT ENABLED THEM TO GAIN SOME KNOWLEDGE ABOUT THE CONCEPT AND PROCEDURES FOR ESTABLISHING JSC.

A. Institutional Assessment

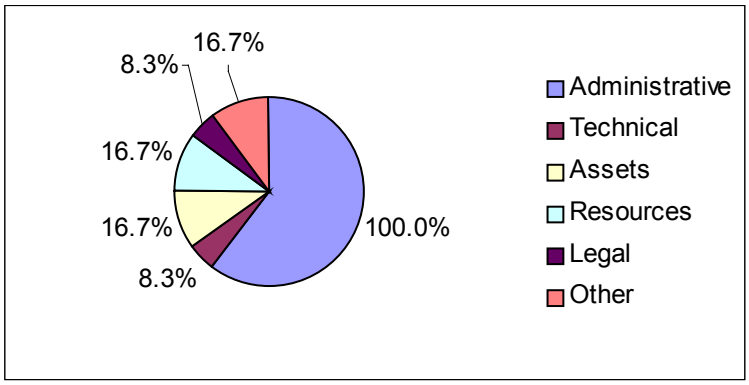
1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the villages joining the proposed JSC?

All of the village councils (100%) in this cluster supported the idea of establishing a JSC. They all indicated that they are willing to play an active role in establishing the new entity. In this respect, the PWA and the MoLG expressed their full support for the establishment of the JSC. The PWA reinforced its support by expressing its readiness to assist the JSC in providing them with the technical support that they need and with the tariff system PWA has already established. By the same token, the MoLG did not see any need to change the JSC law of August 1998, and it also does not envisage a change in the future.

The roles that the village council envisages to play in the establishment of the JSC are presented in figure 4.1.

Fig. 4.1 Areas where village councils are willing to extend support to proposed JSC



The village councils within this cluster enjoy a fairly good working relationship (seven out of twelve villages surveyed rated it excellent, five villages rated their relationship as good). All of the villages surveyed have had a joint project with at least one of the other villages in the same cluster. This cooperation is manifested in carrying out joint projects in the areas of: Roads: (8 projects), Education: (4 projects), Health: (4 projects), Services: (4 projects) Water: (1 project) and Others: (5 projects).

THE LEVEL OF COMMUNITY COOPERATION IS GOOD IN THIS CLUSTER, AND CAN REFLECT POSITIVELY ON THE ESTABLISHMENT OF THE JSC.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

The majority of the village councils (75%) would like the PWA to be present on the board of directors as opposed to 50% in favor of having the MoLG represented and 16.6% for the MoE. The representation of the professional associations and the non-governmental organizations (NGOs) sector was not favored by any of the villages in this cluster. As for the role that the PWA and MoLG will play on the board of the JSC, the opinions of the village councils were divided between advisory and observer roles.

Table 4.1 Entities favored by the Village Council Members to be represented on the Board of Directors

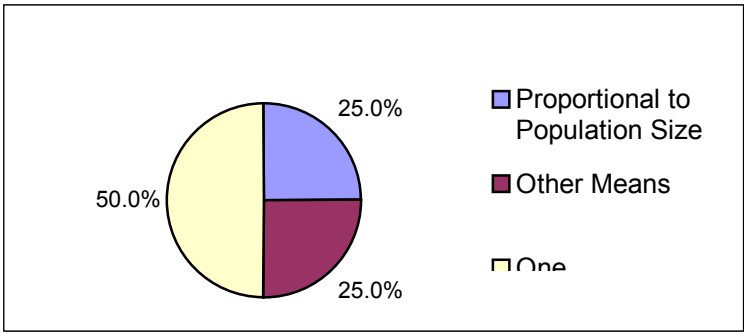
Suggested Role	PWA	MoLG
Advisory	55%	67%
Observer	33%	33%

(An advisory member does not have voting power but can intervene and participate in discussions in the board of JSC. An observer member does not have voting power and does not participate in the discussions in the board of JSC).

Regarding the ideal number of JSC board members, 58% of the village councils favor 11 members, 33% favor 15 members, and 8.3% (Rujeib village) favor 5 members.

When asked about the form of representation of each village council on the Board of JSC, the opinions varied between having one representative per community, proportional representation according to the size of the population, and other means of representation.

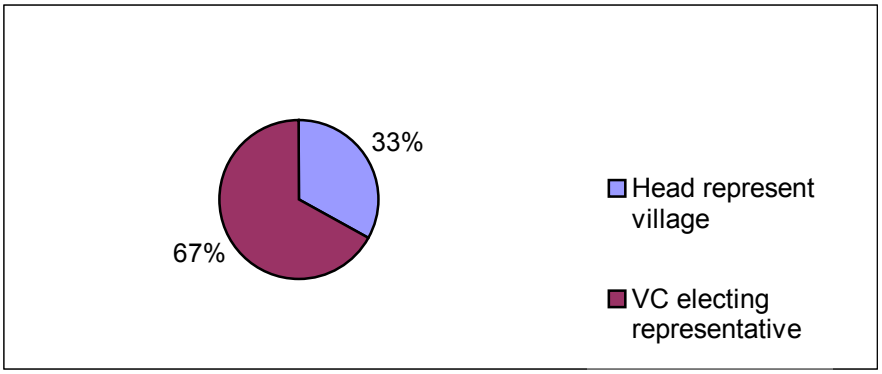
Fig 4.2 Form of representation of each village council on the Board of the JSC



As to the preferred voting mechanism within the board of the JSC, 58.3% of the village councils preferred a voting system that allows for one vote per member (a system of voting preferred by the MoLG), while 41.7% opted for a voting system proportional to the size of population (a system of voting preferred by the PWA). However, the PWA was open to adopting any voting system, which the village councils find most appropriate for them.

As for who should represent each village council on the board of the JSC, 33% opted for the head of their village council to represent them, while 67% opted for the village council to elect one of its members to represent them.

Fig. 4.3 Preferred means of representation of the village councils on the board of JSC



3. Existing Capacity and Systems in Place

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?
Basic question: Are there existing management systems for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

Regarding the availability of independent departments that deal with water service in the subject villages, answers revealed that 90% of the villages do not have any, while the remaining 10% (Einabus and Rujeib) have such units or divisions. In this regard it is

important to note that the water unit at Einabus consists of an accountant, a bill collector, and a technician, each with a primary level of education and experience. This team is responsible for an old, deteriorated and non-functioning water network.
In terms of human resources, the absence of water networks is reflected in the very limited capacities of the available personnel in that respect. Furthermore, members in these village councils were involved in running the daily operating and administrative affairs as employees. As a result, these members have two roles, one as representatives, and the other as employees such as cashiers or accountants. This dual role weakens the internal control system. Managerial capacity in this cluster is limited since, according to the questionnaire, most of these councils do not have adequate staff (first or second level) in major fields such as technicians, engineers, in management, finance and accounting.

Lack of functional and managerial experiences (technical and financial) in the fields of water and sanitation characterizes the situation in this cluster. There must be appropriate training to provide management and technical skills for the personnel and operators of the proposed JSC. The existing human resources may be utilized and may form a pool of resources for establishing the proposed JSC.

In terms of physical resources, the information that was provided by the communities in this cluster regarding office and maintenance equipment, operating systems etc, indicate their inadequacy. Space allocated for water management activities has been found to be relatively small. Warehouses to store equipment and pipes are generally available, and were offered by the village councils for use by the JSC. However, they are in need of maintenance to render them suitable for future use. In general, property is available within the visited communities that can be rented and used as office and working premises for the activities of the JSC. In the initial stage, suitably sized offices and a warehouse may be rented in a location to be decided upon by the JSC board in due time.

4. Water Sectoral Issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

In general, the absence of water networks provides an insight to the current situation in the villages constituting this cluster. No significant water projects have been implemented. The village councils considered the amounts of water available to them via collection cisterns and tankers as insufficient and inadequate in terms of quality. Moreover, neither the PWA nor the Ministry of Health conduct regular water quality control tests in the villages.

Public sanitation services in this cluster are non-existent, wastewater or sanitation networks are not available, and instead these villages rely heavily on the use of cesspits and septic tanks for wastewater disposal.

It is clear that the issue of the quantities of water allocated through the Village Water and Sanitation Program for this cluster is a key element in determining the program's success in this cluster.

5. Public Consultation and Participation

BASIC QUESTION: ARE THERE IN THE VILLAGE EXPERIENCES REGARDING CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

Villages in this cluster have had some experience in public awareness activities such as lectures in sanitation aspects, which were conducted in the village of Til. Lectures conducted in most villages were related to agricultural development, the environment, health, and medical services; organization of group work, and public campaigns.

The public consultation and community participation of the communities in this cluster tends to be relatively small. However, people in this cluster clearly demonstrated their readiness to participate and cooperate during the establishment of the JSC.

6. Institutional Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The form of representation, the voting mechanism and number of representatives of each community on the board of the JSC must be given careful consideration. It is obvious that no single model can be imposed. The communities small and large should agree on the final form of the board of the JSC. Training sessions for the village council representatives in the cluster can outline the pros and cons of the different models, and participants can reach a consensus on an acceptable form.

The lack of reasonably experienced human resources in this cluster is evident. Designing a well-oriented and implemented training program is needed in order to enable the recruited personnel identified for the JSC to manage a transparent, efficient and self-sustainable entity.

The JSC board members have to agree on a well-structured water tariff that the JSC would apply for the service. It is important for the JSC to cooperate with the PWA in setting the appropriate water tariff for the sake of sustainability of the JSC.

The PWA must seriously address how to ensure sufficient amounts of water to be supplied to this JSC. It is clear that the villages in this cluster are striving for a reliable water supply system.

B. Financial Assessment

1. Tariff Policy and Subsidies:

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

There are no adequate water supply services or units in any of the villages, with the minor exception of Rujeib and Einabus where there are small, poorly equipped water units. Most of the respondents therefore did not answer this section, since it does not apply to their situation. Answers in this section, if any, would constitute opinions rather than accurate facts. Findings indicate that:

- In reference to who was responsible for setting water tariffs, 41.7% of the respondents (comprising the villages of Rujeib, Einabus and Til), believe that it is up to their respective village councils to set the water tariff. The remaining respondents did not answer this question.

- The same respondents indicated that setting a fixed price per m^3 was the appropriate type for the water tariff for their JSC.

- Except for Rujeib, operating expenses were recovered from collected fees. This is not the case in the other villages.

- Direct collection was used for collecting water charges in Einabus and Rujeib.

- Jordanian Dinars and New Israeli Shekels are the currencies currently used in Einabus and Rujeib.

- With regard to adjusting water charges to reflect inflation, Einabus and Til said that they usually adjust the water rates for inflation, while Rujeib did not.

- With regard to the bill format, all except for Beit Furik, preferred to apply a unified bill for water and sanitation charges.

2. Current Market

Table 4.2 Current Water Market / JSC - Nablus Central

Population & Consumption			
Population in 2002 (000)	27		
Household size (persons per household)	5.7		
Total households (000)	5		
Total current consumption (000 m^3/Year)	447		
Total household consumption (m^3/month)	7.8		
Daily consumption per capita (l/c/d)	45		
Water Supply	**Yearly m^3 (000)**	**Yearly NIS (000)**	
Piped water	0	0	
Tankers	268	4563	
Rain water	179	4778	
Total water supply	**447**	**9341**	
Recurrent Cost of Water to Households			
	Monthly Consumption (m^3)	**Cost Per Household (NIS/m^3)**	**(NIS/month)**
Piped water	0.0	0	0
Tankers	4.7	20	93.6
Rain water	3.1	26.7	83
Total monthly consumption and cost of water per household	**7.8**		**177**
Affordability	**Year 2002**		
Average yearly income (poverty line) NIS	19200		
Average yearly water cost per household	2123		
Percent of water related to annual income	11%		
Before the intifada 21% of the population was living under the poverty line (World Bank Report, January 2001).			

Assumptions:

1. Average daily per capita consumption in the Nablus area is estimated at 45 L/C/D, based on figures quoted by village council heads.
2. Cisterns constitute 40% of water supplied while water tanks constitute 60%.
3. In addition to a recurrent cost of NIS 1000/Year for its maintenance, households without piped networks normally invest about NIS 5000 in a 40-80 M^3 cistern.
4. The cost of rainwater is the estimated cost of maintaining the cistern
5. Price of 1 M^3 of Tankered water in the Nablus area averaged NIS 20. Some price variations (NIS 17 to 23) occur between winter and summer.
6. Persons per household figure is the West Bank average as provided by PCBS.
7. In accordance with the recommendations of the EHP design team, Beit Furik, Beit Dajan and Iraq Burin were excluded from the financial analysis of this cluster.

The local water sources come mainly from collection wells, springs and water purchased from vendors. The scarcity of springs and their poor water yields and quality makes the amount of water consumed by locals through springs negligible. Water collection

cisterns are common and very widely used as a means to harvest the rainwater and to hold water supplied by water tankers. Households typically have water cisterns ranging in size between 40-80 cubic meters. Water networks in the Nablus Central Cluster are non-existent. The average total per capita consumption in the Nablus Central cluster is about 45 l/c/d. The water cisterns make up around 40% of the daily demand, which is equal to 18/c/d, and tankers 60%, which equals 27 l/c/d. These percentages are the result of rigorous checking with the local village councils. The water tankers are privately owned, and are normally operated by individuals owning a truck (and in most cases not licensed or safe to transport potable water).

The absence of water networks in the Nablus Central Cluster Villages places a lot of strain on the amounts of water supplied via the collection wells (cisterns) and thus the households rely more on water tankers to supplement their rainwater supply. The population figures considered refer to the total population in the cluster since it is usual for all of the households to have collection wells (cisterns) constructed next to the houses and through which the household supply of water (both rain and through tankers) is satisfied.

3. Cost of Establishing the JSC

BASIC QUESTION: WHAT IS THE COST OF PROVIDING THE SERVICE?

Table 4.3 details the start-up costs of the proposed JSC for the first year of operations, excluding the construction cost of the network. Construction cost for this cluster is estimated at $4.8 million or NIS 21.6 million as per the project design (one half of the estimated total construction cost for all selected villages in the Nablus governorate). We expect that the funding source for the start-up costs will be in the form of a grant, while future investment needs will be completely funded by the JSC itself.

It is anticipated that the local households within the JSC's jurisdiction will share some of the start-up costs in the form of connection fees in the year 2003 (one year prior to the commissioning of the JSC). It is estimated that 55% of the total population in 2003 will pay an average of NIS 720 in connection fees (total contribution of NIS 1.98 million). This is a relatively low participation rate in anticipation that the communities do not have any previous experience with water networks. All the connection fees that will be collected in the following years (2004 and after) will be counted as part of the JSC revenues.

Table 4.3 Start-up Costs / JSC - Nablus Central

Management:	**NIS(000)**	**US$(000)[1]**
One vehicle (small pickup truck)	119	26
Computers, monitors, printers, fax and photocopier	60	13
Office furniture and refurbishing	45	10
Field communication systems (approximately 6 devices)	12	3
First time purchase of office supplies	12	3
Billing/accounting software (including installation, training, and support)	70	16
Sub-Total	***318***	***71***
Operations & Maintenance:		
Various machines (welding, threading, asphalt cutting)	70	16
Wrenches, drills, and general tools	12	3
Equipment (leak detection, pipe detection, pipe testing)	66	15
Portable electric generator	16	4
Civil works equipment (compactor, roller, cement mixer, etc)	15	3
Chlorination testing equipment	11	2
Spare parts	60	13
Sub-Total	***250***	***56***
Working Capital (recurrent fixed costs for first six months)	***361***	***80***
Total Start-up Costs:	**929**	**206**

(1) Exchange rate: $1 = NIS 4.5

Table 4.4 below lists the recurrent costs of the proposed JSC for the first year of operations, excluding the cost of bulk water. Except for "Network Maintenance" and "Depreciation Expense", all amounts are extrapolated from the actual costs of the Jenin Joint Services Council for the first two years of operation. "Network Maintenance" is estimated at 1.5% of the total value of the water network (NIS 21.6 million), and "Depreciation Expense" is estimated at 3% of the total value of the water network plus the value of other management and operations assets as detailed in table 4.3 (NIS 22.2 million).

Table 4.4 Recurrent Yearly Fixed Costs / JSC - Nablus Central

Staffing Costs	**NIS(000)**	**US$(000)[1]**
General Manager	46	10
Accountant	39	9
Administrative Assistant	33	7
Janitor	21	5
Technician	33	7
Warehouse Officer	33	7
Meter Reader	26	6
Total Staffing Costs	***231***	***51***
Cash Operations & Management Costs		
Network Maintenance	324	72
Transportation	40	9
Warehouse Costs	40	9
Stationery/Supplies	10	2
Utilities	10	2
Advertisement/Printing	7	2
Office Rent	40	9
Office maintenance	7	2
Audit Fees	8	2
Miscellaneous	5	1
Total Cash O & M Costs	***491***	***109***
Sub-Total (Fixed Cash Costs)	***722***	***160***
Depreciation Expense	***665***	***148***
Total Recurrent Fixed Costs:	**1,387**	**308**

(1) Exchange rate: $1 = NIS 4.5

4. Pricing Scenarios and Affordability

Basic question: Will the tariff levels required to cover JCS costs be affordable?

Table 4.5 below summarizes various pricing scenarios at different water consumption levels. This table indicates that water sales will begin generating surplus (after depreciation) when a minimum water tariff of NIS 6.5/m^3 is applied, with an average consumption of 80 l/c/d. It is worth noting that the scenarios below do not take into consideration the NIS 720 for the connection fee to be collected by the JSC. This will generate additional revenue for the JSC to be used to fund system expansion and start-up costs during the first six months of operation.

In terms of affordability of JSC's services, the various prices per cubic meter applied in Table 4.5 below are much less than the average price (i.e. for water supplied by tankers) that is currently being paid by households in this cluster. Also, the connection fee of NIS 720 is consistent with the fee that is currently being charged by the neighboring village councils/towns that have water networks, and are affordable to the households (at only 3.7% of income for those at the poverty line).

Table 4.5: Pricing Scenarios / JSC – Nablus Central

Population = 29,739 in 2004:

Price NIS/M^3	L/C/D	Yearly Sales ($000M^3$)	Yearly Revenue NIS(000)	Uncollected Bills (10%) NIS(000)	Yearly Water Purchases NIS(000)	Fixed Cash Costs NIS(000)	Surplus (Deficit) Before Dep. NIS(000)	Depre-ciation Expense NIS(000)	Surplus (Deficit) After Dep. NIS(000)
4.50	40	304	1,368	137	868	722	(359)	665	(1,024)
	60	456	2,052	205	1,302	722	(178)	665	(843)
	80	608	2,735	274	1,736	722	4	665	(661)
5.50	40	304	1,672	167	868	722	(86)	665	(751)
	60	456	2,507	251	1,302	722	233	665	(432)
	80	608	3,343	334	1,736	722	551	665	(114)
6.50	40	304	1,976	198	868	722	188	665	(477)
	60	456	2,963	296	1,302	722	643	665	(22)
	80	608	3,951	395	1,736	722	1,098	665	433

Assumptions:

- JSC is responsible for the internal water network only.
- 70% of the population is connected to the system.
- Unaccounted-for water is 20% of total water sales.
- Price of bulk water equals to NIS 2.38/M^3.
- Depreciation expense is for the internal network plus other O&M assets (NIS 22,168,000 X 3%).
- Total fixed costs include 1.5% of network cost for yearly repairs and maintenance.

Table 4.6 shows that the average projected yearly water bill per household (at an average tariff of NIS 5.5/M^3) is only 3% of the annual household income at the poverty line level of NIS 1600 per month. (According to the January 2001 World Bank report on *Poverty in the West Bank and Gaza*, 21% of the West Bank households were earning an income below the poverty line right before the beginning of the Al-Aqsa intifada). The conclusion here is that at least 79% of the population can afford the cost of water (at 3%

of their income at poverty line) through a water network. Even if the average tariff charged to consumers is increased to NIS 6.5/M^3, the average yearly water bill per meter (per household) will increase to NIS 737, representing 3.8% of the annual household income at poverty level.

Note also that the systems are in surplus at NIS 5.5/M3 at expected consumption levels before depreciation is included. Since new systems will not require the cash for system replacement that an existing system would, the full depreciation does not have to be applied for some period of time. This will require discussion with PWA on how to apply their tariff policy, which includes depreciation.

Table 4.6: Affordability of the JSC's Water Services / JSC- Nablus Central

	2004	2005	2006	2007	2008
Avg. Yearly Bill/ Water Meter (NIS)	624	624	624	624	624
Yearly Household Income (Poverty Line) (NIS) (1)	19200	19200	19200	19200	19200
Avg. Yearly Bill as % Poverty Line Income	3%	3%	3%	3%	3%

(1) Before the intifada 21% of the Palestinian population was living under the poverty line (World Bank Report, January 2001).

It is worth noting that the intifada has adversely affected the average household income, and thus the percentage of poor households has increased drastically.

5. Financial Projections

Basic question: Is the JSC financially a self-sustainable enterprise?

The projected financial statements for this JSC are included in Annex 1. Table 4.7 below includes a summary of the various factors that were included in building the financial model, as well as some financial indicators that resulted from running the financial model.

It is assumed that each household connected to the water network will be supplied with an average of 60 liters per capita per day. This assumption is in line with the PWA's objective of supplying the local communities with piped water, as well as conserving the limited amount of bulk water that is available under its administration.

All financial projections indicate that this JSC will be a viable and self-sustainable enterprise. It is worth noting that the connection fees were the main factor to help the JSC cover its recurrent costs. Without this source of revenue, the JSC will incur a net loss, and will have to charge a higher rate for its water services. Table 4.8 below indicates the price per m^3 which the JSC is required to charge in order to generate enough revenue to break-even, without taking into consideration the revenue from connection fees.

Table 4.7: Summary of Projections for Five Years / JSC – Nablus Central

Population	2004	2005	2006	2007	2008
Population (000)	30	31	32	33	35
Average Household Size	5.7	5.7	5.7	5.7	5.7
Population Served (000)	21	25	27	29	31
Service Levels					
% Population Served (1)	70%	80%	85%	88%	90%
Water Connections (one/hh) (000)	4	4	5	5	5
Add'l Connections per year (000)	1	1	0	0	0
Per Capita Consumption (Lit/day)(2)	60	60	60	60	60
Water Purchases & Sales					
Water Billing (000 M^3 per year)(3)	456	541	597	642	680
Unaccounted for Water %	20%	20%	20%	20%	20%
Unaccounted for Water (000 M^3/year)	91	108	119	128	136
Water Purchases (000 M^3 per year)	547	650	717	770	816
Average Tariffs & Costs					
Avg. Cost of Bulk Water (NIS/M^3) (4)	2.38	2.38	2.38	2.38	2.38
Avg. Water Tariff (NIS/M^3)(4)	5.50	5.50	5.50	5.50	5.50
Avg. Monthly Bill/ Water Meter (NIS)	57	57	57	57	57
Avg. O&M Costs /M^3 Purchased (w/o Dep.)	1.32	1.18	1.12	1.10	1.10
Avg. O&M Costs /M^3 Sold (w/o Dep.)	1.58	1.41	1.35	1.33	1.32
Avg. O&M Costs /M^3 Purchased (w/ Dep.)	2.54	2.20	2.05	1.97	1.91
Avg. O&M Costs /M^3 Sold (w/ Dep.)	3.04	2.64	2.46	2.36	2.29
Financial Ratios					
Current Ratio (CA/CL)	6	7	8	9	10
Return on Fixed Assets (NP/NFA)	0.01	0.01	0.00	0.00	0.00

(1) Estimated percentage based on the community experience with water networks.

(2) Assuming that the network will provide 60 Liter/Capita/Day.

(3) Assuming that the yearly per capita consumption is from the new water network.

(4) Average prices for year 2000.

Table 4.8: Break-even Point (1) / JSC – Nablus Central

Coverage	Price per M^3 (NIS)
Cash O & M	4.93
Cash O & M plus depreciation	6.55

(1) Based on demand of 60 liters per capita per day.

6. Financial Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The potential financial risks may be summarized as follows:

1. The JSC is made additionally responsible for the main transmission line and pumping station, resulting in higher capital investment for the JSC.

2. The population served drops to 50% of total population in 2003 and only increases to 85% in 2007.
3. The per capita supply of water from the network is limited to only 40 liters/day.
4. The average water tariff charged to the consumers is only NIS 4.5 per m^3 in 2003.

The robustness of the financial results was assessed for each one of the variables and not for combinations of variables.The financial viability of the JSC in this cluster is not affected by any of the above risks, occurring individually. When more than one risk occurs at the same time, a net loss may result in all or part of the five years under consideration. For example, if the JSC is given the responsibility for the main transmission line coupled with a drop in population being served (50% only connect to the network), a net loss and negative return on net assets is expected to result in the year 2003 only, while there should be positive cash flow returns in all following years. A net loss is expected to occur in all years if the JSC takes responsibility for the main transmission line, and the per capita water supply drops to 40 l/c/d.

In general, because of the comparatively large population size of this cluster, it is the least sensitive cluster to any of the risks mentioned above, occurring individually.

C. Recommendations:

1. The communities in this cluster are willing to join in the proposed JSC. Their enthusiasm stems from their desire to have an adequate and reliable water supply system. It is recommended that the proposed JSC be established.

2. It is recommended that a sufficient quantity of water to the JSC in this cluster be established before the decision is taken to set up a JSC. This is a major factor that determines the financial viability and future stability of the proposed JSC.

3. It is recommended to devise a well-planned recruitment campaign in order to attract the appropriate human resources that may exist within this cluster. This will form an important step in the process of establishing and operating the JSC.

4. Some of the village council representatives have demonstrable leadership skills. It is also recommended that these people be drawn into the process of establishing the JSC in order to lead the way for others to follow.

5. It is recommended that PWA play an active role in monitoring and providing oversight for establishing the water tariff system for this JSC. The water tariff structure, as envisaged by PWA, should include: the JSC operating costs, the water system's expansion, the price of bulk water, depreciation, and major maintenance costs.

6. It is recommended that many of the above issues be discussed with the communities at the start of the project, through a participatory approach, in order to mobilize all their resources and empower them to become the owners of this project.

Chapter 5: *Nablus Southeast Cluster*

Geographical Location:	Cluster of communities lying in the Southeast region of Nablus Governorate
Communities Included:	This cluster constitutes of 10 communities: Aqraba (5,849), Yanun (115), Usarin (1,202), Jurish (1,020), Qusra (3,276), Qaryut (1,821), Talfit (2,206), Jalud (334), Majdel Bani Fadel (1,611), and Duma (1,637)
Total Population:	19,071 (according to the PCBS census of 1997)

General Cluster Description:

THE ABOVE CLUSTER OF VILLAGES IS LOCATED 5 TO 10 KM TO THE SOUTHEAST OF NABLUS, WITH A TOTAL POPULATION OF 19,071 ACCORDING TO THE PCBS 1997 CENSUS.

THE ECONOMY OF THESE VILLAGES IS PRIMARILY DEPENDENT ON AGRICULTURE AND SMALL

UNDERDEVELOPED ENTERPRISES. FOLLOWING THE OSLO ACCORDS, THE PA GRADUALLY TOOK OVER THE CONTROL OF CIVILIAN AFFAIRS IN THESE VILLAGES. THESE VILLAGES ARE RUN AND MANAGED BY LOCAL COUNCILS, WHICH PROVIDE SOME BASIC SERVICES, MAINLY IN THE AREAS OF ROADS, ELECTRICITY AND OTHER. THE ABOVE CLUSTER OF VILLAGES HAS POORLY ESTABLISHED SERVICE DELIVERY AND REGULATORY FUNCTIONS IN THE FIELDS OF WATER SUPPLY, SANITATION, SOLID WASTE MANAGEMENT, AND LAND USE PLANNING.

A. Institutional Assessment

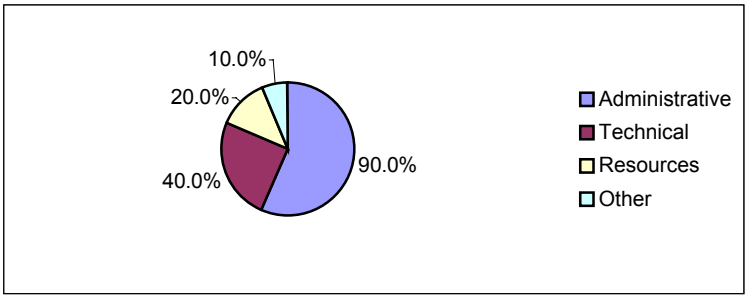
1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the villages joining the proposed JSC?

The representatives of the village councils support the idea of establishing a JSC, and are willing to be part of the new entity. All of the villages surveyed were in support of establishing the JSC and expressed readiness to play an active and positive role. Moreover, the PWA and the MoLG expressed their full support for the establishment of the JSC. PWA reinforced its support by expressing its readiness to assist the JSC in providing them with the technical support that they need and with the tariff system PWA has already established. By the same token, the MoLG did not see any need to change the JSC law of August 1998, and it also does not envisage a change in the future.

The roles that the village council is expected to play in the establishment of the JSC were distributed as follows in figure 5.1.

Fig. 5.1 Areas where village councils are willing to extend support to proposed JSC



The village councils within this cluster enjoy a fairly good working relationship. All of the village councils expressed their willingness to cooperate at the inter-communal level, and all do not foresee any obstacles in joining in the proposed JSC.

Five (Aqraba, Usarin, Jurish, Qaryut and Jalud) of the ten villages surveyed have had joint projects with at least one of the other villages in the same cluster. This cooperation is manifested in carrying out joint projects in the areas of: Roads: (4 projects), Health: (1 project), Services: (2 projects) and Water: (2 projects).

THE LEVEL OF COMMUNITY COOPERATION IS GOOD IN THIS CLUSTER, WHICH MAY REFLECT POSITIVELY ON THE ESTABLISHMENT OF THE JSC.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

The majority (70%) of the villages indicated that the PWA should be present on the JSC board of directors with the same percentage in favor of having the MoLG. ,20% of the villages favored having the MoE on the board as well. The representation of professional associations and non-governmental organizations was not favored by the overwhelming majority of the villages in this cluster. Only Majdal Bani Fadel opted for having such representation on the board. In terms of the role that these agencies will have to play on the board of the JSC, the opinions of the village councils were divided between advisory and observer roles as per table 5.1 below.

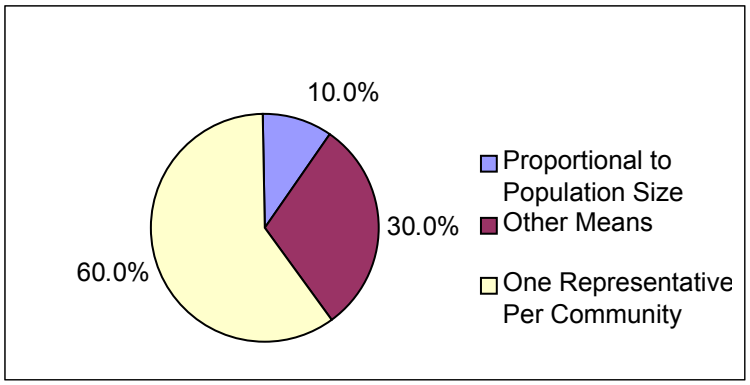
Table 5.1 Entities Represented on the Board of Directors

Suggested Role	PWA	MoLG
Advisory	20%	20%
Observer	80%	80%

(An advisory member does not have voting power but can intervene and participate in discussions in the board of JSC. An observer member does not have voting power and does not participate in the discussions in the board of JSC).

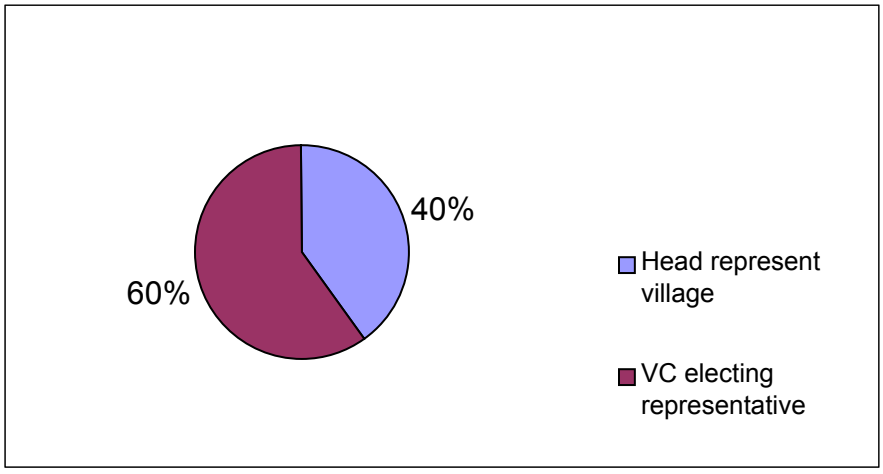
Regarding the ideal number of JSC board members, 50% of the village councils favor 15 members, 10% favor 11 members, 30% favor 5 members, and 10% (one village council Qaryut) favor a 21 member JSC board. In terms of the voting mechanism 60% of the villages prefer one vote per community as opposed to 40% in favor of a proportional voting system according to the population number. When asked about the form of representation of each village council on the Board of the JSC, opinions ranged from having one representative per community to proportional representation according to the size of population.

Fig 5.2 Form of representation of each village council on the board of the JSC



As for who should represent each village council on the board of the JSC, 40% opted for the head of their village council to represent them, and 60% opted for the village council to elect one of its members to represent them.

Fig. 5.3 Preferred means of representation of the village councils on the board of JSC



3. Existing Capacity and Systems in Place

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?
Basic question: Are there existing management systems for water supply and sanitation that can be used as a starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

Regarding the availability of independent departments in charge of water service in these villages, 80% revealed that their councils do not have any, while the remaining 20% (Aqraba and Qusra) had such units or divisions. In this regard these units are small and very basic in nature since these villages lack any piped water networks. In the case of Aqraba, the unit manages the municipality's water distribution and septic tanks.

In terms of availability of physical resources, in general there are no equipment or buildings that may be utilized in the majority of the village councils.

In terms of availability of natural resources, four villages namely Jurish, Qaryut, Yanun, and Talfit mentioned that they had natural springs.

The questionnaires revealed that village council heads are currently involved in the daily operations of their village councils as salaried employees. This results in having more than one role to perform, the first as a member or head of the village council and the other as a cashier or accountant. Such a situation is found in Jurish, Talfit, and Jalud. The occurrence of dual functions weakens the internal control system of the village councils.

Regarding the type of experiences available in these villages, findings revealed the following characteristics:

- Limited managerial capacity. According to the questionnaire, most of these councils do not have adequate staff (first or second level) in major fields especially engineers, in management, and in finance

- No relevant, adequate managerial structure. According to the results of the questionnaires, almost all village councils lack specific service departments. Furthermore, most of the staff employed by the councils are employed mainly in accounting, maintenance (electricity), and bill collection.

- Lack of functional and managerial experiences in the fields of water and sanitation services, in both the technical and the financial fields. This is due to the fact that there are no departments, divisions, or units dealing with such services. A minor exception is found in Yanun and Aqraba, which have Water and Sanitation units run by a small number of workers with a primary level of education and experience

4. Water Sectoral Issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

In general, the absence of water networks characterizes the current situation in the villages constituting this cluster. No significant water projects or networks were implemented in this cluster, except for a small water network for Yanun, the smallest village in this cluster with a population of 115 (implemented by the Palestinian Hydrology Group). The village councils considered the amounts of water available to them through collection cisterns and tankers are insufficient, and inadequate in terms of quality. Moreover, neither the PWA nor
the Ministry of Health is conducting regular water quality tests.
Public sanitation services in this cluster are non-existent; wastewater or sanitation networks are not available, and instead these villages rely heavily on the use of cesspits and septic tanks for wastewater disposal.

With the exception of Aqraba, which has a tanker for dislodging residents' cesspools, no independent sanitation unit or department is found in any of the villages.

5. Public Consultation and Participation

BASIC QUESTION: ARE THERE IN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE (JSCS)?

Most of the villages in this cluster, with the exception of Duma and Majdal Bani Fadel, have had no public awareness activities. Public meetings were conducted in some villages in this cluster covering different areas such as education and health.

The public consultation and community participation of the communities in this cluster tends to be relatively small, which warrants an emphasis on this aspect during the implementation stage of the proposed JSC.

6. Institutional Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The form of representation, the voting mechanism and the number of representatives of each community on the board of the JSC must be given careful consideration. It is obvious that no single model can be imposed. Each of the communities should agree on the final form of the board of the JSC. Training workshops for the village councils in the cluster can outline the pros and cons of the different models and participants can then reach a consensus on an acceptable form.

The lack of reasonably experienced human resources in this cluster is evident. Designing a well-oriented and implemented training program is needed in order to enable the recruited JSC personnel to manage a transparent, efficient and self-sustainable entity.

The JSC board members have to agree on a well-structured water tariff that the JSC would apply for the service. It is important for the JSC to cooperate with PWA in setting the appropriate water tariff for the sake of sustainability of the JSC.

The PWA must address the issue of ensuring sufficient amounts of water to be supplied to this JSC. It is clear that the villages are striving for a reliable water supply system.

D. Financial Assessment

1. Tariff Policy and Subsidies:

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE
PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

No meaningful or relevant water supply services are found in the villages in this cluster. As a result, most of the respondents did not answer this section, as it did not apply to their situation.

Practically, no tariff policies were found in any of the villages. Therefore, a comprehensive unified tariff package (prices, collection mechanism, types, brackets, subscription fees, subsidies, bill format, service connection fees, mechanisms to enforce payments, currency, and inflation adjustments) should be designed and coordinated with the PWA.

2. Current Market

Table 5.2: Current Water Market / JSC - Nablus South East

Population & Consumption		
Population in 2002 (000)	23	
Household size (persons per household)	5.7	
Total households (000)	4	
Total current consumption (000 M^3/Year)	386	
Total household consumption (M^3/month)	7.8	
Daily consumption per capita (L/C/D)	45	
Water Supply	**Yearly M^3 (000)**	**Yearly NIS (000)**
Piped water	0	0
Tankers	231	3935
Rain water	154	4120
Total water supply	**386**	**8055**

Recurrent Cost of Water to Households	Monthly Consumption (M^3)	Cost Per Household (NIS/M^3)	(NIS/month)
Piped water	0.0	0	0
Tankers	4.7	20	93.6
Rain Water	3.1	26.7	83
Total monthly consumption and cost of water per household	**7.8**		**177**

Affordability	Year 2002
Average Yearly Income (poverty Line) NIS	19200
Average Yearly Water Cost Per Household	2123
Percent of Water Related to Annual Income	11%

Before the intifada 21% of the population was living under the poverty line (World Bank Report, January 2001).

Assumptions:

1. Average daily per capita consumption in the Nablus area is estimated at 45 L/C/D, based on figures quoted by village council heads
2. Cisterns constitute 40% of water supplied while water tanks constitute 60%.
3. In addition to a recurrent cost of NIS 1000/Year for its maintenance, households without piped networks normally invest about NIS 5000 in a 40-80 M^3 cistern.
4. The cost of rainwater is the estimated cost of maintaining the cistern
5. Price of 1 M^3 of Tankered water in the Nablus area is averaged at NIS 20. Some price variations NIS 17 to 23 occur between winter and summer.
6. Persons per household figure is the West-Bank average as provided by PCBS.
7. In accordance with EHP design team, Beit Furik, Beit Dajan and Iraq Burin were excluded from the financial analysis of this cluster.

The local water sources come mainly from collection wells, springs and water purchased from vendors. The scarcity of springs and their poor quality water make the amount of water consumed by locals through springs negligible. Water collection cisterns are common and very widely used as means to harvest the rainwater and hold water supplied by tankers. Households typically have water cisterns ranging in size between 40 to 80 cubic meters. Water networks in the Nablus Southeast cluster are non-existent. The average total per capita consumption in the Nablus Southeast cluster is about 45 l/c/d. The water cisterns account for around 40% of the daily demand (18/c/d), and the tankers for the other 60% (27 l/c/d). These percentages are the result of rigorous checking with the local village councils. The water tankers are privately owned, normally operated by individuals owning a truck (and in most cases not licensed or safe to transport potable water).

The absence of water networks in the Nablus Southeast Cluster villages places a strain on the amount of water supplied via the collection wells (cisterns) and thus the households rely more on water tankers to supplement their rainwater supply. The population figures considered refer to the total population in the cluster since it is usual for all of the households to have collection wells (cisterns) constructed next to the houses and through which the household supply of water (both rain and through tankers) is satisfied.

3. Cost of Establishing the JSC

BASIC QUESTION: WHAT IS THE COST OF PROVIDING THE SERVICE?

Table 5.3 details the start-up costs of the proposed JSC for the first year of operations, excluding the construction cost of the network. The construction cost for this cluster is estimated at $4.8 million or NIS 21.6 million as per the project design (one half of the estimated total construction cost for all selected villages in the Nablus governorate). We expect that the funding source for the start-up costs will be in the form of a grant, while future investment needs will be completely funded by the JSC itself.

It is anticipated that the local households within the JSC's jurisdiction will share some of the start-up costs in the form of connection fees to be collected in the year 2003 (one year prior the commissioning of the JSC). It is estimated that 55% of the total population in 2003 will pay an average of NIS 720 in connection fees (total contribution of NIS 1.7 million). This is a relatively low participation rate in anticipation that the communities do not have any previous experience with water networks. All the connection fees that will be collected in the following years (2004 and after) will be counted as part of the JSC revenues.

Table 5.3: Start-up Costs / JSC - Nablus Southeast

Management:	**NIS(000)**	**US$(000)[1]**
One vehicle (small pickup truck)	119	26
Computers, monitors, printers, fax and photocopier	60	13
Office furniture and refurbishing	45	10
Field communication systems (approximately 6 devices)	12	3
First time purchase of office supplies	12	3
Billing/accounting software (including installation, training, and support)	70	16
Sub-Total	***318***	***71***
Operations & Maintenance:		
Various machines (welding, threading, asphalt cutting)	70	16
Wrenches, drills, and general tools	12	3
Equipment (leak detection, pipe detection, pipe testing)	66	15
Portable electric generator	16	4
Civil works equipment (compactor, roller, cement mixer …etc)	15	3
Chlorination testing equipment	11	2
Spare parts	60	13
Sub-Total	***250***	***56***

Working Capital (Recurrent Fixed Costs for first six months)	***361***	***80***
Total Start-up Costs:	**929**	**206**

(1) Exchange rate: $1 = NIS 4.5

Table 5.4 below lists the recurrent costs of the proposed JSC for the first year of operations, excluding the cost of bulk water. Except for "Network Maintenance" and "Depreciation Expense", all amounts are extrapolated from the actual costs of the Jenin Joint Services Council for the first two years of operation. "Network Maintenance" is estimated at 1.5% of the total value of the water network (NIS 21.6 million), and "Depreciation Expense" is estimated at 3% of the total value of the water network plus the value of other management and operations assets as detailed in Table 5.3 (NIS 22.2 million).

Table 5.4: Recurrent Yearly Fixed Costs / JSC - Nablus Southeast

Staffing Costs	**NIS(000)**	**US$(000)[1]**
General Manager	46	10
Accountant	39	9
Administrative Assistant	33	7
Janitor	21	5
Technician	33	7
Warehouse Officer	33	7
Meter Reader	26	6
Total Staffing Costs	***231***	***51***
Cash Operations & Management Costs		
Network Maintenance	324	72
Transportation	40	9
Warehouse Costs	40	9

Stationery/Supplies	10	2
Utilities	10	2
Advertisement/Printing	7	2
Office Rent	40	9
Office maintenance	7	2
Audit Fees	8	2
Miscellaneous	5	1
Total Cash O & M Costs	***491***	***109***
Sub-Total (Fixed Cash Costs)	***722***	***160***
Depreciation Expense	***665***	***148***
Total Recurrent Fixed Costs:	**1,387**	**308**

(1) Exchange rate: $1 = NIS 4.5

4. Pricing Scenarios and Affordability

Basic question: Will the tariff levels required to cover JCS costs be affordable?

Table 5.5 below summarizes various pricing scenarios at different water consumption levels. From this table it is anticipated that water sales will begin generating surplus (after depreciation) when a minimum of NIS 6.5/m^3 is applied to an average consumption of 80 l/c/d. It is worth noting that the scenarios below do not take into consideration the NIS 720 for the connection fees to be collected by the JSC. This will generate additional revenue for the JSC to be used to fund additional system expansions and future investment needs.

Table 5.5: Pricing Scenarios / JSC – Nablus Southeast

Population = 25,839 in 2004:									
Price NIS/M^3	**L/C/D**	**Yearly Sales ($000M^3$)**	**Yearly Revenue NIS(000)**	**Uncollected Bills (10%) NIS(000)**	**Yearly Water Purchases NIS(000)**	**Fixed Cash Costs NIS(000)**	**Surplus (Deficit) Before Dep. NIS(000)**	**Dep. Expense NIS(000)**	**Surplus (Deficit) After Dep. NIS(000)**
	40	264	1,188	119	754	722	(407)	665	(1,072)
4.50	60	396	1,783	178	1,131	722	(249)	665	(914)
	80	528	2,377	238	1,508	722	(91)	665	(756)
5.50	40	264	1,452	145	754	722	(169)	665	(834)
	60	396	2,179	218	1,131	722	107	665	(558)

	80	528	2,905	290	1,508	722	384	665	(281)
	40	264	1,717	172	754	722	69	665	(596)
6.50	60	396	2,575	257	1,131	722	464	665	(201)
	80	528	3,433	343	1,508	722	859	665	194

Assumptions:

- JSC is responsible for the internal water network only.
- 70% of the population is connected to the system.
- Unaccounted-for water is 20% of total water sales.
- Price of bulk water equals to NIS 2.38/M^3.
- Depreciation expense is for the internal network plus other O&M assets (NIS 22,168,000 X 3%).
- Total fixed costs include 1.5% of network cost for yearly repairs and maintenance.

In terms of affordability of JSC's services, the various prices per cubic meter applied in Table 5.5 above are much less than the average price that is currently being paid by households in this cluster. Also, the connection fee of NIS 720 is consistent with the fees that are currently being charged by the neighboring village councils/towns that have water networks, and are affordable to the households (at only 3.7% of their income at poverty line). Table 5.6 shows that the average projected yearly water bill per household (at an average tariff of NIS 5.5/m^3) is only 3% of the annual household income at the poverty line level of NIS 1600 per month. (According to a recent World Bank Report on Poverty in the West Bank and Gaza of January 2001, 21% of the West Bank households were earning an income below the poverty line right before the beginning of the Al-Aqsa intifada). The conclusion here is that at least 79% of the population can easily afford the cost of water (at 3% of their income at poverty line) through a water network. Even if the average tariff charged to consumers is increased to NIS 6.5/m^3, the average yearly water bill per meter (per household) will increase to NIS 737, representing 3.8% of the annual household income at the poverty line level.

Note also that the systems are in surplus at NIS 5.5/M3 at expected consumption levels before depreciation is included. Since new systems will not require the cash for system replacement that an existing system would, the full depreciation does not have to be applied for some period of time. This will require discussion with PWA on how to apply their tariff policy, which includes depreciation.

Table 5.6: Affordability of the JSC's Water Services / JSC – Nablus Southeast

	2004	2005	2006	2007	2008
Avg. Yearly Bill/ Water Meter (NIS)	624	624	624	624	624
Yearly Household Income (Poverty Line) (NIS) (1)	19200	19200	19200	19200	19200
Avg. Yearly Bill as % Poverty Line Income	3%	3%	3%	3%	3%

(1) Before the intifada 21% of the Palestinian population was living under the poverty line (World Bank Report, January 2001).

It is worth noting that the intifada has adversely affected the average household income, and thus the percentage of poor households has increased drastically.

5. Financial Projections

Basic question: Is the JSC financially a self-sustainable enterprise?

The projected financial statements for the JSC are included in Annex 2. Table 5.7 below includes a summary of the various factors that went into building the financial model, as well as some financial indicators that resulted from running the financial model.

It is assumed that each household connected to the water network will be supplied with an average of 60 liters per capita per day. This assumption is in line with the PWA's objective of supplying the local communities with piped water, as well as conserving the limited amount of bulk water that is available under its administration.

It is clear that an average tariff rate of NIS 5.5/m^3 (as assumed in the model) will not be enough to cover the JSC's recurrent costs, although the cash flow will be positive. This is mainly due to the relatively small population size in this cluster coupled with a relatively large investment in the network. Once we apply a higher average tariff rate, such as NIS 6.5/m^3, the financial viability of the JSC will be assured. Table 5.8 below indicates the price per m^3 which the JSC is required to charge in order to generate enough revenue to break even, without taking into consideration the revenue from connection fees.

Table 5.7: Summary of Projections for Five Years / JSC – Nablus Southeast

Population	**2004**	**2005**	**2006**	**2007**	**2008**
Population (000)	26	27	28	29	30
Average Household Size	5.7	5.7	5.7	5.7	5.7
Population Served (000)	18	21	24	25	27
Service Levels					

% Population Served [1]	70%	80%	85%	88%	90%
Water Connections (one/hh) (000)	3	4	4	4	5
Add'l Connections per year (000)	1	1	0	0	0
Per Capita Consumption (Lit/day)[2]	60	60	60	60	60
Water Purchases & Sales					
Water Billing (000 M^3 per year)[3]	396	470	519	558	591
Unaccounted for Water %	20%	20%	20%	20%	20%
Unaccounted for Water (000 M^3/year)	79	94	104	112	118
Water Purchases (000 M^3 per year)	475	565	623	669	709
Average Tariffs & Costs					
Avg. Cost of Bulk Water (NIS/M^3) [4]	2.38	2.38	2.38	2.38	2.38
Avg. Water Tariff (NIS/M^3) [4]	5.50	5.50	5.50	5.50	5.50
Avg. Monthly Bill/ Water Meter (NIS)	57	57	57	57	57
Avg. O&M Costs /M^3 Purchased (w/o Dep.)	1.52	1.35	1.29	1.27	1.26
Avg. O&M Costs /M^3 Sold (w/o Dep.)	1.82	1.62	1.55	1.53	1.52
Avg. O&M Costs /M^3 Purchased (w/ Dep.)	2.92	2.53	2.36	2.27	2.20
Avg. O&M Costs /M^3 Sold (w/ Dep.)	3.50	3.04	2.83	2.72	2.64
Financial Ratios					
Current Ratio (CA/CL)	6	6	7	8	8
Return on Fixed Assets (NP/NFA)	0.00	(0.00)	(0.01)	(0.01)	(0.01)

(1) Estimated percentage based on the community experience with water networks.
(2) Assuming that the network will provide 60 Liter/Capita/Day.
(3) Assuming that the yearly per capita consumption is from the new water network.
(4) Average prices for year 2000.

Table 5.8: Break-even Point [1] / JSC – Nablus Southeast

Coverage	Price per m^3 (NIS)
Cash O & M	5.20
Cash O & M plus depreciation	7.06

(1) Based on demand of 60 liters per capita per day.

6. Financial Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The potential financial risks may be summarized as follows:

1. The JSC is made additionally responsible for the main transmission line and pumping station, resulting in higher capital investment for the JSC.
2. The population served drops to 50% of total population in 2003 and only increases to 85% in 2007.
3. The capita supply of water from the network is limited to only 40 l/c/d.
4. The average water tariff charged to the consumers is only NIS 4.5 per m^3 in 2003.

The financial viability of the JSC in this cluster is not affected by any of the above risks, occurring individually. When more than one risk occurs at the same time, a net loss may result in all or part of the five years under consideration. For example, if the JSC is given the responsibility of the main transmission line coupled with a drop in population being served (with only 50% of households connecting to the network), a net loss and negative return on net assets is expected to result in the year 2003 only, while positive cash flow returns in all following years. A net loss is expected to occur in all years if the JSC takes responsibility for the main transmission line, and the per capita water supply drops to 40 l/c/d.

In general, because of the relatively smaller population size of this cluster, this is the most sensitive cluster to any of the risks mentioned above.

C. Recommendations:

1. The communities in this cluster are willing to join in the proposed JSC. Their enthusiasm stems from their desire to have an adequate and reliable water supply system. It is recommended that the proposed JSC be established.

2. It is recommended that a sufficient quantity of water to the JSC in this cluster be established before the decision is taken to set up a JSC. This is a major factor that determines the financial viability and future stability of the proposed JSC.

3. It is recommended to devise a well-planned recruitment campaign in order to attract the appropriate human resources that may exist within this cluster. This will form an important step in the process of establishing and operating the JSC.

4. Some of the village council representatives have demonstrable leadership characteristics. It is also recommended that these people be drawn into the process of establishing the JSC in order to lead the way for others to follow.

5. It is recommended that PWA play an active role in monitoring and providing oversight for establishing the water tariff system for this JSC. The water tariff structure, as envisaged by PWA, should include: the JSC operating costs, the water system's expansion, the price of bulk water, depreciation, and major maintenance costs.

6. It is recommended that many of the above issues be discussed with the communities at the start of the project, through a participatory approach, in order to mobilize all their resources and empower them to become the owners of this project.

Chapter 6: Hebron Northwest Cluster

Geographical Location:	Cluster of communities lying in the north-western region of Hebron Governorate
Communities Included:	This cluster constitutes 8 communities: Beit Ummar (8,987), Surif (9,541), Al-Jaba'a (643), Beit Ula (6,726), Nuba (3,178), Kharas (5,056), Jala (180) and Safa (785)
Total Population:	35,096 (according to the PCBS census of 1997)

General Cluster Description:

THE VILLAGES/TOWNS OF THIS CLUSTER ARE CLASSIFIED AS MEDIUM-SIZE ENTITIES; FOUR OF THEM ARE MUNICIPALITIES (BEIT UMMAR, SURIF, BEIT ULA AND KHARAS), ONE IS A FAIRLY LARGE VILLAGE COUNCIL (NUBA) AND THREE ARE FAIRLY SMALL VILLAGE COUNCILS (AL-JABA'A, JALA AND SAFA). IN TERMS OF LOCATION, THIS CLUSTER LIES TO THE NORTHWEST OF THE CITY OF HEBRON.

Although the economy of these villages predominantly depends on agriculture and livestock, there are some commercial and industrial activities, such as stone cutting (in Beit Ummar) and olive pressing, especially within the larger-size communities. Basic services such as roads, electricity, water supply, and school construction are also provided.

A. Institutional Assessment

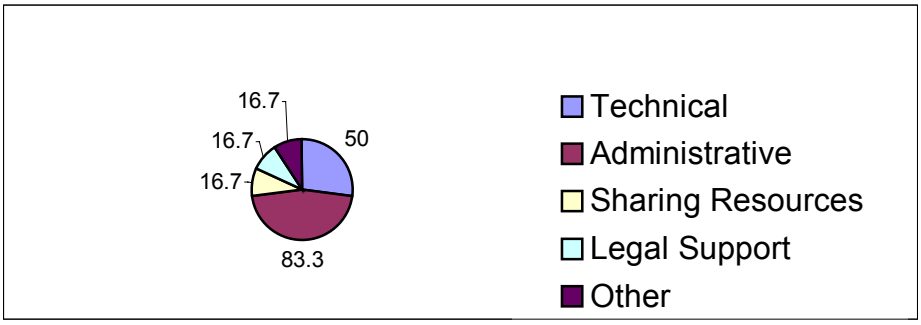
1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the villages joining the proposed JSC?

The village council representatives support the establishment of a JSC, and are willing to take part in the new entity (83.3% of the responding village councils were in support for the JSC while 100% expressed their readiness to play an active and positive role). Surif village council considers that establishing the JSC might do away with some of the jurisdictions of the local village councils). In this respect, PWA and the MoLG expressed their full support for the establishment of the JSC. PWA reinforced its support by expressing its readiness to assist the JSC in providing them with the technical support that they need and with the tariff system PWA has already established. The MoLG did not see

any need to change the JSC law of August 1998, and it also does not envisage a change in the future.

Fig. 1 Areas where Village Councils are Willing to Extend Support to Proposed JSC



The village councils within this cluster seem to enjoy good working relationships; of the villages surveyed two-thirds rated it as good while one-third rated it as excellent. Their cooperation is manifested in the implementation of joint projects in the areas of: Roads: (3 projects), Education: (2 project), Health: (1 project), Services: (1 project) and Water: (1 project), a total of eight projects. The relatively small number of joint projects compared to the size of population of this cluster is due to the fact that the communities in this cluster are fairly large and tend to carry out individual municipal projects. The joint projects were specifically executed with the smaller communities (e.g. Jala)

THE LEVEL OF COMMUNITY COOPERATION IS REASONABLY GOOD IN THIS CLUSTER, WHICH MAY REFLECT POSITIVELY ON THE ESTABLISHMENT OF THE JSC.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

The majority (83.3%) of the village councils would like to see the PWA, the MoLG and the MoE represented on the JSC Board of Directors. The representation of the professional associations and the non-governmental organizations (NGOs) sector was only favored by 50% and 33% of the respondents respectively as per Table 6.1 below.

Table 6.1 Entities Represented on the Board of Directors

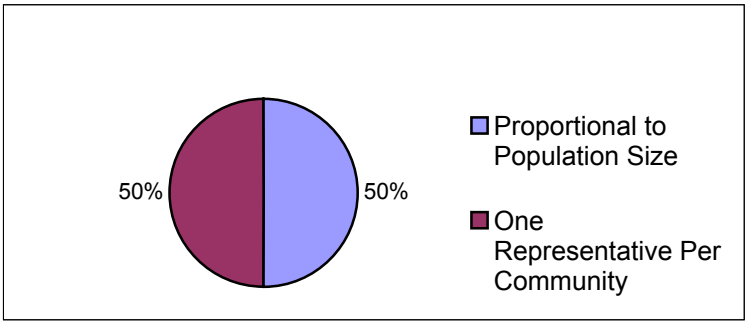
Suggested Role	PWA	MoLG	Others
Advisory	33%	83.3%	50%
Observer	50%	16.6%	50%

(An advisory member does not have voting power but can intervene and participate in discussions in the board of JSC. Observer member does not have voting power and does not participate in the discussions in the board of JSC).

Regarding the ideal number of JSC board members, 33.3% of the village councils favor 11 members, 16.6% favor 15 members, and 16.6% favor 21 members.

When asked about the form of representation of each village council on the Board of JSC, the opinion was divided equally between having one representative per community and proportional representation according to the size of the population.

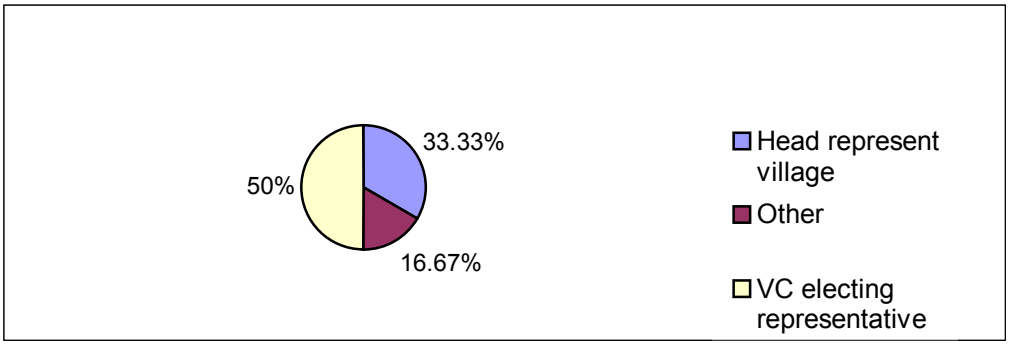
Fig 6.2 Form of Representation of Each Village Council on the Board of the JSC



As to the preferred voting mechanism within the board of the JSC, 83.3% of the village councils preferred a voting system that allows for one vote per member (a system of voting preferred by the MoLG), while 16.7% opted for proportional voting system according to the population size (a system of voting preferred by the PWA). However, the PWA was open to adopting any voting system, which the village councils themselves would study and find most appropriate to them.

As for who should represent each village council on the board of the JSC, 33.33% opted for the head of their village council to represent them, 50% opted for the village council to elect one of its members to represent them, and 16.67% think that the representation of the village council on the board of the JSC must be done through other means.

Fig. 6.3 Preferred Means of Representation of the Village Councils on the Board of JSC



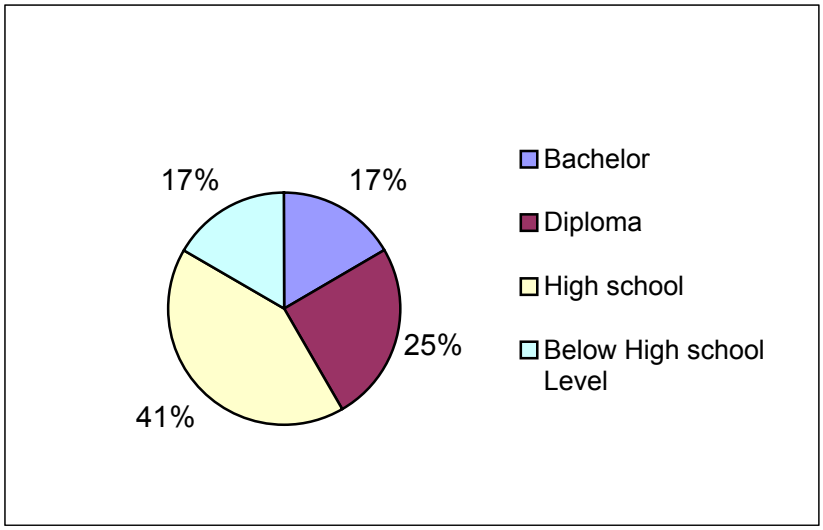
3. Existing Capacity and Systems in Place

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?
Basic question: Are there existing management systems for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

Four out of the eight village councils classified as municipalities (Beit Ummar, Surif, Kharas and Beit Ula) have very modest independent units for management of the water services. These water management units are very basic in nature and lack sophistication. Three more village councils (Nuba, Jala and Al-Jaba'a) have networks, but they don't have any independent water units. Safa does not have a water network.

In terms of human resources, the four municipalities have qualified technicians and engineers. They are young in age, with a fair amount of experience in managing local level water networks. The qualifications of the available personnel varied between the bachelor's degree level (16.7%), diploma level (25%), high school level (41.7%), while the rest are not graduates of any high school (16.6%).

Fig. 6.4 Available Capacities



Information provided by the communities in this cluster regarding available physical resources revealed that office equipment, operating systems and maintenance equipment are generally inadequate, insufficient and noticeably old (mainly because of absence of proper maintenance and clear shortage of funds). Space allocated for water management activities has been found to be relatively small. Warehouses to store equipment and pipe supplies are generally available, and were offered by the village councils for use by the JSC. However, they need maintenance to render them suitable for future use. In general,

property is available within the visited communities to be used as offices and working premises for the activities of the JSC. In the initial stage, suitably sized offices and a warehouse may need to be rented in a location to be decided upon by the JSC board.

4. Water Sectoral Issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

Planning and execution of water projects in this cluster has been executed until now with a very limited perception and has not been based on a technically sound perception of the future needs of these communities. This has resulted in considerable variations in the state of the existing water networks between the communities. Some have networks that have been recently installed while others have old and deteriorated networks. A decision to scrap or use parts of the existing networks has financial implications, which will have to be evaluated by the design team.

Although water networks exist in seven out of the eight communities, they suffer from interrupted supply and the amount of water is insufficient, a situation which is exacerbated during the summer seasons. This is due to excessive water losses attributed to an old and poorly maintained system. As a result, the consumers are not regularly paying their bills for water to the municipalities/village councils, who are currently responsible for the supply of water to their communities. Considerable debts have been accumulating over the last year and a half, which places the issue of supplying water to the communities at a huge risk.

Beit Ummar and Kharas are the two communities where people generally do not complain about water supply. Kharas is the only community that is making a profit out of the water service because it has a relatively new water network.

Finally, none of the communities have any independent public sanitation systems. No public sanitation networks exist in this cluster. The only forms of sanitation in this cluster are cesspits within the individual houses.

5. Public Consultation and Participation

BASIC QUESTION: ARE THERE IN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

All of the joint projects (eight in number) targeted the village of Jala, a small community that lacks almost all basic services. The eight joint projects are as follows: education (2), roads (3), water wells (1), health (1), and in development (1).

All of the communities that participated in the joint projects rated their experience as positive. The relatively low number of joint projects is because communities in this

cluster tend to be relatively large and are classified as municipalities, which normally receive direct aid to provide basic services to their communities.

The public consultation experience and community participation of the communities in this cluster are not significant. However, people expressed their willingness to participate and cooperate during the establishment of the JSC.

6. Institutional Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The fact that this cluster is composed of relatively large communities (municipalities) and relatively small communities (small village councils) is likely to create a working relationship that is dominated by the larger communities. The decision-making mechanism could then be influenced by interests of the larger communities at the expense of the smaller ones.

The form of representation, the voting mechanism, and the number of representatives of each community on the board of the JSC must be given careful consideration. It is obvious that no single model can be imposed. The communities small and large should agree on the final form of the board of the JSC. Training workshops for the village councils in the cluster can outline the pros and cons of the different models and all participants can then reach a consensus on an acceptable form. The need is for a reliable and adequate water supply system.

There will be important relationships between the JSC and the PWA, as the overall regulator of water in Palestine, and also between the JSC and the MoLG, as the authority registering the JSC and holding it financially and administratively accountable. The communities clearly favored the MoLG in an advisory role while the PWA was foreseen as playing an observer role. Having different roles for the different entities could result in complicating the functioning of the board. The experience of the Jenin JSC indicates that the PWA and the MoLG should be in an advisory role on the board of the JSC. They have to exercise their supervisory role on the board insofar as water and administrative issues are concerned. The addition of other entities on the board might further complicate the functioning of the board. A balanced and productive relationship with the PWA and the MoLG can be achieved through training of the JSC board members.

Water networks, deteriorated as they may be, are present in seven of its communities, six of which are not paying for their supply of bulk water and are accumulating debts. As an example, the total debts of three communities in this cluster, namely Nuba, Surif and Beit Ummar, as of the end of June 2001, was NIS 4.2 million. Debts will be a major issue that needs to be resolved at an early stage of the JSC creation. The issue of households that are already connected to a water network and for which they have paid the connection fees, is going to pose another challenge needing resolution at an early stage. Whether they will have to pay to be connected to the new network, would be totally exempted, or

would pay only the difference in price for the new connection remains uncertain at this stage.

The fact that the communities in this cluster have human resources with some kind of experience in water networks need to be carefully dealt with. On one hand, employing some of the existing staff in order to build in further incentives for the communities to actively participate in the JSC may well lead to an excessive organizational structure of the JSC. Also, this could also lead to having JSC staff that lack motivation and are accustomed to bureaucratic forms of management structure. Overcoming such a risk involves careful planning of the organizational structure of the JSC and striking a balance between existing and new staff. This may be facilitated by means of transparent recruitment procedures that also involve the stakeholders themselves in the process.

Based on discussions with the EHP team that carried out the technical feasibility study, taking into consideration budget as well as time constraints, the engineering design team took the decision to start (Phase I) with the villages in this cluster which do not have any water network or which have water networks that are severely deteriorated. These villages include Beit Ula and Al-Jaba'a only. Accordingly, this cluster will have communities that have existing water networks (whose physical condition has yet to be assessed by the EHP technical team) and few with completely new water networks. This will certainly pose a challenge to the formation of the JSC in this cluster.

B. Financial Assessment

1. Tariff Policy and Subsidies:

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

Seven out of the eight communities that have water distribution networks in this cluster replied that they have so far been responsible for setting their own water tariffs. Jala does not have a water network. In terms of the type of tariff being implemented, two villages, namely Nuba and Surif, are applying the sliding tariff policy, whereby a minimum charge of NIS 20 for the first 5 cubic meters is applied and then the price per cubic meter increases in the following brackets, in ranges of NIS 4 to 5. The other villages implement a fixed charge per m^3 for any amounts of water consumed.

Water charges are paid to the local village council / municipality, in New Israeli Shekels (NIS), which is the adopted currency for payment. The price for purchasing bulk water is NIS 2.38 per m^3 for all of the village councils as set by the WBWD. The village councils have indicated that they charge an average of NIS 604 for the household connection fee, with the connection fees ranging from a minimum of NIS 440 and a maximum of NIS 880. The connection fees include both the cost of the water meter and an insurance amount that is held as a policy against non-payment.

The direct collection method is used for collecting the water charges from the consumers as well as direct payment to the municipalities. When the supplier modifies the price of water, two villages said that they would modify the water charge to the consumer during the following two months or in the next bill. Two villages responded that no price adjustment is made to accommodate the change in bulk water price increase, and the rest did not respond at all.

With respect to dealing with non-payment, three villages replied that they would resort to settling the consumer debt by allowing payments in installments, one village resorts to disconnecting the water supply until the balance is paid, and one village resorts to other measures, such as cutting off the electricity supply.

The charge for a cubic meter of water is not linked to the cost of living index, while two other villages answered that they recovered their operating costs. As a result, only three villages indicated that the fees charged per cubic meter of water did not cover their operating costs. It is evident that the village councils and their respective water units lack a clear understanding of what expenses are to be recovered under the implemented water tariff. Answers to the questions posed above are indicative only and should not be relied on or assumed to be accurate due to the lack of understanding of accounting principles.

Regarding whether the village councils / municipalities had a policy in place to accommodate the poor and underprivileged, two villages answered that they have a policy to accommodate the poor through either total exemption or allowing payments in installation, while three other village councils / municipalities mentioned that no special measures are implemented to accommodate the poor in their communities.

When asked about their preference for issuing separate or combined bills for water and sanitation, 50% of the village councils / municipalities prefer to issue separate bills, while the other 50% prefer one combined bill for water and sanitation.

It is necessary to have a unified tariff system, agreed upon with the PWA, that takes into consideration issues like changes in water tariffs, subsidies, and currency fluctuation in order to keep the operations of the JSC profitable. Generally, the PWA is in charge of setting the tariffs for water and wastewater (and has indicated a preference for a stepped tariff system with fixed charge for each bracket). The water tariffs should cover the JSC operating costs, system expansion, price of bulk water, depreciation, and major maintenance costs.

Although the PWA regulates tariffs and approves and disapproves changes, it has no mechanism in place for tariff adjustments to compensate for inflation and project cost recovery, since the PWA considers current circumstances in the country to be one of restructuring and building.

Also, sound accounting principles need to be applied in the operation of the JSC coupled with proper training, installation of computerized systems, and recruitment of qualified personnel in the accounting department of the JSC. This would ensure proper accounting

procedures are being implemented including depreciation, cost recovery and network replacement within their anticipated lifetime.

2. Current Markets:

BASIC QUESTION: WHAT IS THE SIZE OF THE MARKETS FOR WATER AND SANITATION SERVICES IN THE VILLAGE?

Table 6.2: Current Water Market / JSC - Hebron Northwest

Population & Consumption			
Population in 2002 (000)	43		
Household size (persons per household)	5.7		
Total households (000)	8		
Total current consumption (000 M^3/Year)	952		
Total household consumption (M^3/month)	10.4		
Daily consumption per capita (L/C/D)	60		
Water Supply	**Yearly m^3 (000)**	**Yearly NIS (000)**	
Piped Water	720	3959	
Tankers	78	1163	
Rain Water	155	7629	
Total water supply	**952**	**12750**	
Recurrent Cost of Water to Households	**Monthly Consumption (m^3)**	**Cost Per Household (NIS/M^3)**	**(NIS/month)**
Piped Water	7.9	5.5	43
Tankers	0.8	20	16.9
Rain Water	1.7	49.2	83
Total monthly consumption and cost of water per household	**10.4**		**144**
Affordability	**Year 2002**		
Average Yearly Income (poverty Line) NIS	19200		
Average Yearly Water Cost Per Household	1722		
Percent of Water Related to Annual Income	9%		

Before the intifada 21% of the population was living under the poverty line (World Bank Report, January 2001).

Assumptions:

1. Average daily per capita consumption in the Hebron area is estimated at 60 L/C/D, based on figures quoted by village council heads
2. Average cost of 1 M^3 of piped water is NIS 5.5 as per the village council questionnaires
3. In addition to a recurrent cost of 1000NIS/Year for its maintenance, households without piped networks normally invest about NIS 5000 in a 40-80 M^3 cistern.
4. The cost of rainwater is the estimated cost of maintaining the cistern
5. Price of 1 M^3 of Tankered water in the Hebron area is averaged at 20 NIS. Some price variations between 15 to 25 NIS between winter and summer.
6. Households receive an average of 5.9 M^3/month of piped water (per village council questionnaires and WBWD figures
7. 34L/C/D from network. Cisterns supply 66.66% or 17.3L/C/D of the 26 L/C/D daily needs deficit, while water tankers supply 33.33% or 8.7 L/C/D of deficit.

8. Persons per household figure is the West-Bank average as provided by PCBS.
9. In accordance with EHP design team, Ithna and Tarqumyia excluded from the financial analysis of this cluster.

Water collection cisterns are common and widely used as a means to harvest rainwater and store water supplied by water tankers. Households typically have water cisterns ranging in size between 40 to 80 cubic meters. Water networks in the West Hebron Northwest cluster provide about 34 l/c/d from the total consumed of 60 l/c/d. The deficit is made up by water from cisterns and water tankers. The cisterns make up around 66.7% of the deficit, which is equal to 17.3l/c/d and cisterns 33.3% or 8.7l/c/d. These percentages are the result of rigorous checking with the local village councils. The water tankers are privately owned, normally operated by individuals owning a truck (and in most cases not licensed or safe to transport potable water).

The population figures considered in the above analysis refer to the total population in the cluster and not just those connected to the water networks, which account for over 90% of the households.

3. Cost of Establishing the JSC

BASIC QUESTION: WHAT IS THE COST OF PROVIDING THE SERVICE?

Table 6.3 details the start-up costs of the proposed JSC for the first year of operations excluding the construction cost of the network. Construction costs for this cluster consist mainly of the construction of new networks in two villages: Al Jaba'a and Beit Ula (cost estimated at $1.4 million or NIS 6.3 million as per the project design). We estimate that the total value of the water network in this cluster is $4 million or NIS 18 million, taking into account the value of the existing water networks. We expect that the funding source for the start-up costs will be in the form of a grant, while future investment needs will be completely funded by the JSC itself.

It is anticipated that the local households within the JSC's jurisdiction will share some of the start-up costs in the form of connection fees to be collected in the year 2003 (one year prior the commissioning of the JSC). We estimate that 70% of the total population in 2003 will pay an average of NIS 720 in connection fees (total contribution of NIS 4 million). This is a high participation rate due to the experience of the communities with water networks. All the connection fees that will be collected in the following years (2004 and after) will be counted as part of the JSC revenues. It is worth noting our assumption that all households in this cluster will have to pay the connection fees, even those that are connected to the old networks.

Table 6. 3: Start-up Costs / JSC - Hebron Northwest

Management:	**NIS(000)**	**US$(000)[1]**
Two vehicles (small pickup trucks)	238	53
Computers, monitors, printers, fax and photocopier	108	24

Office furniture and refurbishing	84	19
Field communication systems (approximately 6 devices)	16	4
First time purchase of office supplies	16	4
Billing/accounting software (including installation, training, and support)	70	16
Sub-Total	***532***	***118***
Operations & Maintenance:		
Various machines (welding, threading, asphalt cutting)	92	20
Wrenches, drills, and general tools	16	4
Equipment (leak detection, pipe detection, pipe testing)	81	18
Portable electric generator	25	6
Civil works equipment (compactor, roller, cement mixer …etc)	27	6
Chlorination testing equipment	11	2
Spare parts	100	22
Sub-Total	***352***	***78***
Working Capital (Recurrent Fixed Costs for first six months)	***417***	***93***
Total Start-up Costs:	**1,301**	**289**

(1) Exchange rate: $1 = NIS 4.5

Table 6.4 below lists the recurrent costs of the proposed JSC for the first year of operations, excluding the cost of bulk water. Except for "Network Maintenance" and "Depreciation Expense", all amounts are extrapolated from the actual costs of the Jenin Joint Services Council for the first two years of operation. "Network Maintenance" is estimated at 1.5% of the total value of the water network (NIS 18 million), and "Depreciation Expense" is estimated at 3% of the total value of the water network plus the value of other management and operations assets as detailed in Table 6.3 (NIS 18.88 million).

Table 6.4: Recurrent Yearly Fixed Costs / JSC - Hebron Northwest

Staffing Costs	**NIS(000)**	**US$(000)[1]**
General Manager	46	10
Accountant	39	9
Administrative Assistant	33	7
Janitor	21	5
Technician	33	7
Technician	33	7
Warehouse Officer	33	7
Meter Reader	26	6
Meter Reader	26	6
Meter Reader	26	6
Total Staffing Costs	***316***	***70***
Cash Operations & Management Costs		
Network Maintenance	270	60
Transportation	50	11
Warehouse Costs	65	14
Stationery/Supplies	20	4
Utilities	16	4
Advertisement/Printing	12	3
Office Rent	54	12
Office Maintenance	10	2
Audit Fees	10	2
Miscellaneous	10	2
Total Cash O & M Costs	***517***	***115***
Sub-Total (Fixed Cash Costs)	***833***	***185***
Depreciation Expense	***567***	***126***
Total Recurrent Fixed Costs:	**1,400**	**311**

(1) Exchange rate: $1 = NIS 4.5

4. Pricing Scenarios and Affordability

Basic question: Will the tariff levels required to cover JCS costs be affordable?

Table 6.5 below summarizes various pricing scenarios at different water consumption levels. From this table it is anticipated that water sales will begin generating surplus (after depreciation) when a minimum of NIS 5.5/m³ is applied to an average consumption of 60 l/c/d. It is worth noting that the scenarios below do not take into consideration the NIS 720 for the connection fee to be collected by the JSC. This will generate additional revenue for the JSC to be used to fund additional system expansion and future investment needs.

Table 6.5: Pricing Scenarios / JSC - Hebron Northwest

Population = 47,618 in 2004:									
Price NIS/M^3	L/C/D	Yearly Sales ($000M^3$)	Yearly Revenue NIS(000)	Uncollected Bills (10%) NIS(000)	Yearly Water Purchases NIS(000)	Fixed Cash Costs NIS(000)	Surplus (Deficit) Before Dep. NIS(000)	Dep. Expense NIS(000)	Surplus (Deficit) After Dep. NIS(000)
4.50	40	556	2,503	250	1,588	833	(169)	567	(735)
	60	834	3,754	375	2,383	833	163	567	(403)
	80	1,112	5,006	501	3,177	833	495	567	(71)
5.50	40	556	3,059	306	1,588	833	332	567	(235)
	60	834	4,588	459	2,383	833	914	567	347
	80	1,112	6,118	612	3,177	833	1,496	567	930
6.50	40	556	3,615	362	1,588	833	832	567	266
	60	834	5,423	542	2,383	833	1,665	567	1,098
	80	1,112	7,230	723	3,177	833	2,497	567	1,931

Assumptions:

- JSC is responsible for the internal water network only.
- 80% of the population is connected to the system.
- Unaccounted-for water is 20% of total water sales.
- Price of bulk water equals to NIS 2.38/M^3.
- Depreciation expense is for the internal network plus other O&M assets (NIS 18,884,000 X 3%).
- Total fixed costs include 1.5% of network cost for yearly repairs and maintenance.

In terms of affordability of JSC services, the various prices per cubic meter applied in table 6.5 above are much less than the average price per cubic meter that is currently being paid by households in this cluster. Also, the connection fees of NIS 720 are consistent with the fees that are currently being charged by the neighboring village councils/towns that have water networks, and affordable to the households (at only 3.7% of their income at poverty line). Table 6.6 shows that the average projected yearly water bill per household (at an average tariff of NIS 5.5/m^3) is only 3% of the annual household income at the poverty line level of NIS 1600 per month. (According to a recent World Bank Report on Poverty in the West Bank and Gaza of January 2001, 21% of the West Bank households were earning an income below the poverty line right before the beginning of the Al-Aqsa intifada). The conclusion here is that at least 79% of the population can afford the cost of water (at 3% of their income at poverty line) through a water network. If the average tariff charged to consumers is increased to NIS 6.5/m^3, the average yearly household water bill will increase to NIS 737, representing 3.8% of the annual household income at the poverty level.

Note also that the systems are in surplus at NIS 4.5 before deprecation and at NIS 5.5 including deprecation. This is a very positive financial outlook and is more promising than either of the Nablus clusters.

Table 6.6: Affordability of the JSC's Water Services / JSC – Hebron Northwest

	2004	2005	2006	2007	2008
Avg. Yearly Bill/ Water Meter (NIS)	624	624	624	624	624
Yearly Household Income (Poverty Line) (NIS) **(1)**	19200	19200	19200	19200	19200
Avg. Yearly Bill as % Poverty Line Income	3%	3%	3%	3%	3%

(1) Before the intifada 21% of the Palestinian population was living under the poverty line (World Bank Report, January 2001).

It is worth noting that the intifada has adversely affected the average household income, such that the percentage of poor households has increased drastically.

5. Financial Projections

Basic question: Is the JSC financially a self-sustainable enterprise?

The detailed projected financial statements for the JSC are included in Annex **3**. Table 6.7 below includes a summary of the various factors that went into building the financial model, as well as some financial indicators that resulted from running the financial model.

It is assumed that each individual connected to the water network will be supplied with an average of 60 liters per day. This assumption is in line with the PWA's objective of supplying the local communities with piped water, as well as conserving the limited amount of bulk water that is available under its administration.

All financial projections indicate that this JSC will be a viable and self-sustainable enterprise. Table 6.8 below indicates the price per m^3 which the JSC is required to charge in order to generate enough revenue to break even, without taking into consideration the revenue from connection fees.

Table 6.7: Summary of Projections for Five Years/JSC - Hebron Northwest

Year	2004	2005	2006	2007	2008
Population (000)	48	49	51	53	55
Average Household Size	5.7	5.7	5.7	5.7	5.7
Population Served (000)	38	42	45	48	50
Service Levels					
% Population Served (1)	80%	85%	88%	90%	91%
Water Connections (one/hh) (000)	7	7	8	8	9
Add'l Connections per year (000)	1	1	1	0	0
Per Capita Consumption (l/d)(2)	60	60	60	60	60
Water Purchases & Sales					
Water Billing (000 m^3 per year) (3)	834	921	990	1051	1101
Unaccounted for Water %	20%	20%	20%	20%	20%
Unaccounted for Water (000 M^3/year)	167	184	198	210	220
Water Purchases (000 m^3 per year)	1001	1106	1188	1261	1322
Average Tariffs & Costs					
Avg. Cost of Bulk Water (NIS/m^3) (4)	2.38	2.38	2.38	2.38	2.38
Avg. Water Tariff (NIS/m^3) (4)	5.50	5.50	5.50	5.50	5.50
Avg. Monthly Bill/ Water Meter (NIS)	57	57	57	57	57
Avg. O&M Costs /M^3 Purchased (w/o Dep.)	0.83	0.79	0.77	0.76	0.76
Avg. O&M Costs /M^3 Sold (w/o Dep.)	1.00	0.95	0.93	0.92	0.92
Avg. O&M Costs /M^3 Purchased (w/ Dep.)	1.40	1.30	1.25	1.21	1.19
Avg. O&M Costs /M^3 Sold (w/ Dep.)	1.68	1.56	1.50	1.46	1.43
Financial Ratios					
Current Ratio (CA/CL)	5	8	10	11	13
Return on Fixed Assets (NP/NFA)	0.06	0.06	0.06	0.06	0.06

(1) Estimated percentage based on the community experience with water networks.
(2) Assuming that the network will provide 60 Liter/Capita/Day.
(3) Assuming that the yearly per capita consumption is from the new water network.
(4) Average prices for year 2000.

Table 6.8: Break-even Point (1) / JSC - Hebron Northwest

Coverage	Price per M^3 (NIS)
Cash O & M	4.28
Cash O & M plus depreciation	5.04

(1) Based on demand of 60 liters per capita per day.

6. Financial Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The potential financial risks may be summarized as follows:

1. The JSC is made additionally responsible for the main transmission line and pumping station, resulting in higher capital investment for the JSC.
2. The population served drops to 50% of total population in 2003 and only increases to 85% in 2007.
3. The per capita supply of water from the network is limited to only 40 l/c/d.
4. The average water tariff charged to the consumers is only NIS 4.5 per m3 in 2003.

The financial viability of the JSC in this cluster is not affected by any of the above risks, occurring individually. When more than one risk occurs at the same time, a net loss may result in all or part of the five years under consideration. For example if the JSC is given the responsibility of the main transmission line coupled with a drop in population being served (50% only connect to the network), a net loss and negative return on net assets is expected to result in the year 2003 only, while positive cash flow returns in all following years. A net loss is expected to occur in all years if the JSC takes responsibility for the main transmission line, and if the per capita water supply drops to 40 l/c/d.

In general, the size of the population in this cluster renders it less sensitive to any of the above-mentioned risks, occurring individually.

C. Recommendations:

1. The communities in this cluster are willing to join in the proposed JSC. Their enthusiasm stems from their desire to have an adequate and reliable water supply system. It is recommended that the proposed JSC be established, despite the fact that there are issues that need to be resolved, such as debts, and the current condition of existing networks.

2. It is recommended to incorporate the appropriate human resources that already exist. This will form an additional incentive for the local communities to participate and be involved in the process of establishing and operating the JSC. It is clear that whatever exists in terms of physical and human resources does not fulfill the requirements of running a modern water management entity such as the proposed JSC. Contingency for providing adequate office space, office equipment, operating systems and basic water maintenance equipment must be allowed for. Proper training must be administered to provide management and technical skills for the personnel and operators of the proposed JSC. The existing human resources may be utilized and may form a pool of resources for establishing the proposed JSC. Building on the Jenin experience, the training of the JSC staff must be focused in order to instill motivation for hard and disciplined work, and the JSC must be equipped with state of the art office equipment, management systems and maintenance tools.

3. Some of the village council representatives have demonstrable leadership characteristics. It is also recommended that these people be drawn into the process of establishing the JSC in order to lead the way for others to follow.

4. In terms of financial viability, it is recommended that the issues of debt and existing house connections be resolved, with the assistance of both the PWA and the MoLG. These two issues have a direct impact on the number of houses to be connected to the new network, which in turn are major factors that determine the financial viability of the proposed JSC.

5. It is recommended that the PWA play the role of monitoring and providing oversight for establishing the water tariff system for the JSC. The water tariff structure, as envisaged by PWA, shall include the JSC operating costs, system expansion, the price of bulk water, depreciation, and major maintenance costs.

6. It is recommended that many of the above issues be resolved at the start of the project through a participatory approach with the communities themselves in order to mobilize all their resources and empower them to become the owners of this project.

Chapter 7: ***Hebron Southwest Cluster***

Geographical Location: Cluster of communities lying in the southwestern region of Hebron Governorate.

Communities Included: This cluster constitutes of 17 communities: Tarqumia (10,429), Beir Muslem (137), Ithna (13,364), Beit Maqdum (507), Al-Kum (945), Es-Samieh (1,210), Al Mawraq (415), Deir Samet (4,066), Beit Awwa (5,924), Sikka (572), Al-Majd (1,292), Deir al'Asal al Fouqa (1,313), Deir al'Asal atahta (433), Beit ar-Rush al-Tahta (352), Beit Mirsim (238), al-Burj (1,749) and Khirbet Beit Salameh (239).

Total Population: 43,185 (according to the PCBS census of 1997)

GENERAL CLUSTER DESCRIPTION:

The villages in this cluster are fairly small in size; in many cases they constitute extensions of families in neighboring towns and hence have strong tribal influence. Most of the communities are also fairly small (on the scale of a "khirbeh"), except for three municipalities (Ithna, Beit Awwa and Tarqumia). These communities are fairly conservative in nature, and life there is generally quieter than in urban areas. Lying to the southwest of the city of Hebron, this cluster is the largest, with a population of 43,185. The economy of these villages is predominantly dependent on agriculture and livestock, and the majority of the communities lack basic services, which have to be sought within the larger communities. Some commercial and industrial activities such as stone cutting are found within the three bigger-sized communities.

A. Institutional Assessment

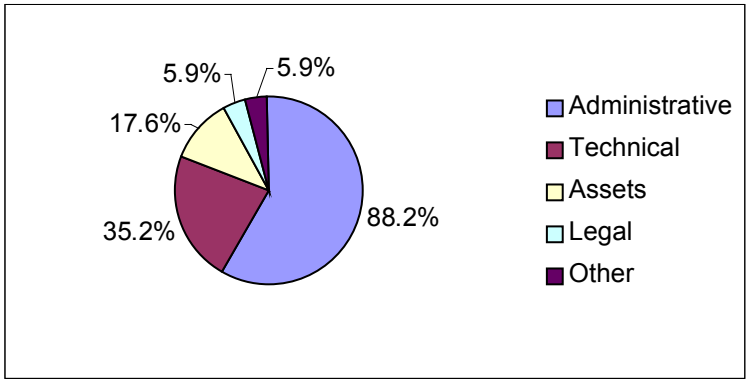
1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the villages joining the proposed JSC?

The village council representatives support the idea of establishing a JSC, and are willing to be part in the new entity. 100% of the responding village councils were in support for the JSC while 82.4% expressed their readiness to play an active and positive role. The PWA and the MoLG expressed their full support for the establishment of the JSC. The PWA reinforced its support by expressing its readiness to assist the JSC in providing them with the technical support that they need and with the tariff system PWA has already established. By the same token, the MoLG did not see any need to change the JSC law of August 1998, and it also does not envisage a change in the future.

The roles that the village council are envisaged to play in the establishment of the JSC were distributed as follows in figure 7.1.

Fig. 7.1 Areas Where Village Councils are Willing to Extend Support to Proposed JSC



The village councils within this cluster indicated that they enjoy good working relationship among themselves. Their cooperation is manifested in carrying out joint projects in the areas of roads, education, health, water and other services.

THE LEVEL OF COMMUNITY COOPERATION IS REASONABLY GOOD IN THIS CLUSTER, AND CAN REFLECT POSITIVELY ON THE ESTABLISHMENT OF THE JSC.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

The majority (82.4%) of the village councils indicated that they would like the PWA and the MoLG on the JSC Board of Directors; while 64.7% of the village councils felt that the MoE should be on the board. The representation of the professional associations and the NGO sector was only favored by 58.8%. In terms of the role that the PWA and the MoLG will have to play on the board of the JSC, the opinions of the village councils ranged between having advisory and observer roles as per Table 7.1 below.

Table 7.1 Entities Represented on the Board of Directors

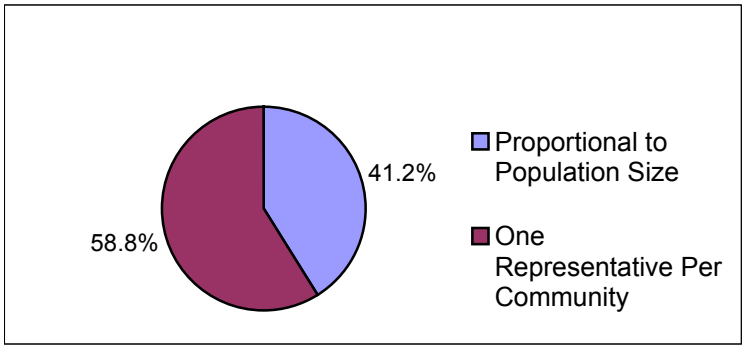
Suggested Role	PWA	MoLG
Advisory	64%	52.9%
Observer	35.2%	47%

(An advisory member does not have voting power but can intervene and participate in discussions in the board of JSC. An observer member does not have voting power and does not take part in the discussions in the board of JSC).

Regarding the ideal number of JSC board members, 41.2% of the village councils favor 11 members, 11.7% favor 15 members, 23.5% favor 21 members, and 23.5% favor 5 members.

When asked about the form of representation of each village council on the Board of the JSC, the opinions were divided into 58.8% who favored proportional representation while 41.2 favored one representative per village council.

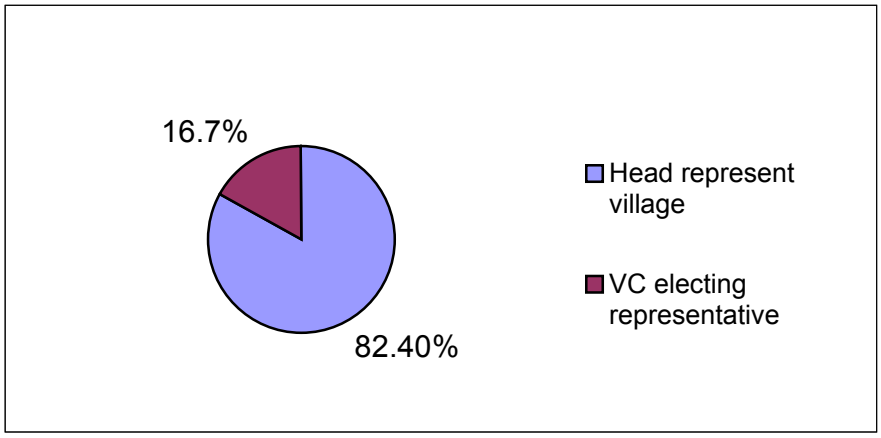
Fig 7.2 Form of Representation of Each Village Council on the Board of the JSC



Regarding the preferred voting mechanism within the board of the JSC, 64.7% of the village councils preferred a voting system that allows for one vote per member (a system of voting preferred by the MoLG), while 35.3% opted for a proportional voting system according to the size of population (a system of voting preferred by the PWA). However, PWA is open to adopting any voting system which the village councils find most appropriate.

As for who should represent each village council on the board of the JSC, 82.4% opted for the head of their village council to represent them, and 16.7% opted for the village council to elect one of its members to represent them.

Fig.7.3 Preferred Means of Representing the Village Councils on the Board of the JSC



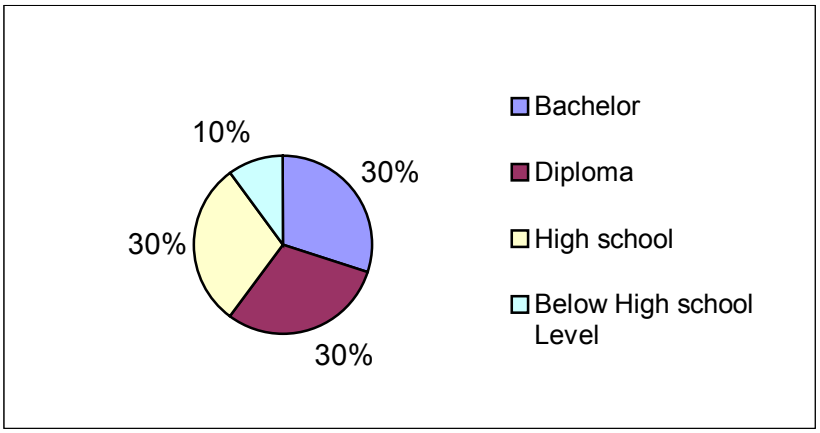
3. Existing Capacity and Systems in Place

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?
Basic question: Are there existing management systems for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

Five out of the seventeen villages surveyed, namely Al-Majd, Ithna, Beit Maqdum, Deir Samit, and Es-Samiya, have independent but modest water units or departments for the management water of the water services in their communities. These water management units are small in nature and lack the sophistication, training and resources of a modern water management department.

In terms of human resources, some municipalities have qualified technicians and engineers. They are young in age, with a fair amount of experience in managing local level water networks. The qualifications of the available personnel varied between the bachelor's degree level (30%), diploma-level (30%), high school level (30%), while the rest are not graduates of any high school (10%).

Fig. 7.4 Available Capacities



With regard to the available physical resources, the available information indicates that office equipment, operating systems, and maintenance equipment are generally inadequate, insufficient, traditional, and noticeably deteriorated (mainly because of absence of proper maintenance and a shortage of funds). Space allocated for water management units has been found to be relatively small and generally inadequate. Warehouses to store equipment and pipe supplies are available, and were offered by the village councils for use by the JSC. Such storage spaces are in need of maintenance to render them suitable for future use. In general, property within the visited communities is available to be used as office and working premises for the activities of the JSC. In the initial stage, suitably sized offices and a warehouse may be rented in a location to be decided upon by the JSC board.

It is clear that the existing physical and human resources do not fulfill the requirements of running a modern water management entity (the proposed JSC), which would be required to manage, maintain and expand the proposed new water distribution network. Plans for providing adequate office space, office equipment, operating systems and basic water maintenance equipment must be developed.

4. Water Sectoral Issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

Planning and execution of water projects in this cluster so far has been carried out with a very limited local involvement and has not been based on any technically sound projected needs of these communities.

Although water networks exist in some of the communities in this cluster, they suffer from interrupted supply and insufficient amounts, a situation which is exacerbated during the summer season. This is due to the fact that excessive water losses exist in water networks that are old and poorly maintained. As a result, the communities are not paying their bills regularly to the municipalities / village councils responsible for the supply of water to their communities. Considerable debts have been accumulating over the last year and a half, which puts the whole issue of supplying the bulk water to the communities at risk. The issue of debt has to be resolved at an early stage of the JSC creation.

The issue of households that are already connected to a water network for which they have paid the connection fees is going to pose another challenge needing resolution at an early stage. Whether they will have to pay to be connected to the new network, would be totally exempted, or would pay only the difference in price for the new connection remains uncertain at this stage.

5. Public Consultation and Participation

BASIC QUESTION: ARE THERE IN THE VILLAGE EXPERIENCES CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

All of the joint projects targeted sectors of education (13), roads (12), water cisterns (7), and in development (7). These projects usually included the collaboration of two small communities, which reflects the great need for basic services in these communities and the fact that satisfying the community needs can be achieved by working together.

The overwhelming majority (97%) of the villages that participated in the joint projects rated their experiences as positive.

The public consultation experience and community participation of the communities in this cluster tends to be relatively limited in nature and manifested in agriculture (3), women's education (2), and one in the proper methods for use of water. The fact that some public consultation activities have taken place within some of the villages in this cluster may translate into having a positive effect on the establishment of the proposed JSC.

6. Institutional Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

This cluster is composed of relatively large communities (municipalities such as Ithna and Tarqumiya) and relatively small communities (small village councils). This is likely to create a working relationship that is dominated by the larger communities. The decision-making mechanism could then be influenced by interests of the larger communities on the expense of the smaller ones. The form of representation, the voting mechanism and the number of representatives of each community on the board of the JSC must be given careful consideration. It is obvious that no model can be imposed. The communities, small and large, should agree on the final form of the board of the JSC. Training workshops for the village councils in the cluster can outline the pros and cons of the different models and all participants can reach a consensus on an acceptable one.

As this cluster has some villages with water networks, the issue of accumulating debts is a major issue that needs to be resolved as soon as possible. As an example, the total debts of five communities in this cluster, namely Tarqumia, Ithna, Deir Samit, Beit Awwa and Al-Majd, accumulated towards the end of June 2001, was NIS 3.4 million. Also, the fact that the households in these communities are already connected to a water network (and for which they have paid the fee), is going to pose an issue that needs to be addressed in terms of whether they will have to pay to be connected to the new network, would be totally exempted, or would pay only the difference in price for the new connection.

Communities in this cluster that have potential human resources with some kind of experience in water networks need to be carefully evaluated when considering employment for the proposed JSC. On one hand, employing some of the existing staff in order to build in further incentives for the communities to actively participate in the JSC may well lead to adopting excessive organizational structure of the JSC. This may also lead to having JSC staff that lack motivation and are accustomed to bureaucratic forms of management structure. Overcoming such a risk involves careful planning of the organizational structure of the JSC, as well as striking a balance between existing staff and new staff. This may be facilitated by means of transparent recruitment procedures that also involve the stakeholders themselves in the process.

Based on discussions with the EHP team that carried out the technical feasibility study and taking into account budget as well as time constraints, the engineering design team took the decision to start Phase I with the villages that do not have any water network, or that have water networks that are severely deteriorated. These villages include Beit

Awwa, Sikka, Tawas, Al-Majd, Deir Al-Asal Al-Tahta, Deir Al-Asal Al-Foqa, Iskeik, Beit Ar-Rush Alfoqa, Beit Ar-Rush At-Tahta, Beit Misrim, Al-Burj, Khirbet Beit Salameh. This excludes the two largest communities in Hebron Southwest SW clusters, namely Tarqumiah and Idhna. This could result in having two major communities playing a passive role (observers) in the initial stages of establishing the JSC, until such time as their water networks are upgraded to a level acceptable for the JSC to include them as full members.

B. Financial Assessment

1. Tariff Policy and Subsidies:

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

Of the villages surveyed in this cluster, 7 villages (46%) have replied that they have a sliding tariff policy, while 6 villages (40%) replied that they have a fixed tariff for the amount of water consumed, and two villages (13.3%) replied that they had a fixed tariff for each three cubic meters consumed. The analysis reveals the absence of a unified policy, mainly due to the inconsistencies and irregularity of supply. Two village councils, namely Beit Ar-Rush Al-Fouqa and Beit Misrim, do not have any tariff specific policies.
Water charges are paid to the local village council / municipality in New Israeli Shekel (NIS), which is the adopted currency for payment. The price for purchasing bulk water is NIS 2.38 per m^3 for all of the village councils, as set by WBWD. On average, the price to the consumer ranges between 3.5 to 10 NIS per cubic meter.

The village councils have indicated that they charge an average of NIS 585 for the household connection fee, ranging from a minimum of NIS 50 and a maximum of NIS 1300. In the majority of cases (76.5% of the villages) the connection fees covered the actual connection only while 11.8% of the villages included an insurance amount that is held as a policy against non-payment, and 11.8% of the villages did not answer this question.

Villages use the direct collection method for collecting the water charges from the consumers as well as direct payment to the municipalities. When the supplier modifies the price of water, 46.7% said that they would modify the water charge to the consumer in the next bill, and 26.7% replied that the adjustment took place in the following two months, while 13.3% did not respond to this question. Responding to the question regarding the adjustment percentage, 93% of the villages indicated that they modify the water bill in the same percentage increased by supplier.

It is noted that the charge for a cubic meter of water is not tied to the cost of living in 64.7% (11 villages) while 23.5% (4 villages) replied that they had a mechanism that ties the price of water to the cost of living, while 11.8% did not answer this question. Answers to the questions posed above are indicative only and should not be relied on or assumed as accurate due to the lack of understanding of accounting principles.

With respect to dealing with non-payment or delinquent customers, 40% of the villages resorted to payments in installments, 13.3% resort to disconnecting the service, 33.3% resort to disconnecting the electricity, 13.3% resort to legal action, and 6.6% resort to tribal laws in enforcing payment.

Regarding whether the village councils / municipalities had a policy in place to accommodate the poor and underprivileged, nine villages answered that they have a policy to accommodate the poor through either total exemption (as is the case in five villages) or allowing payments in installments (in four villages).

When asked regarding their preference for issuing separate or combined bills for water and sanitation, most of the village councils/ municipalities prefer to have separate bill for water independent from that of the sanitation.

2. Current Market

Table 7.2: Current Water Market / JSC - Hebron Southwest

Population & Consumption			
Population in 2002 (000)	24		
Household size (persons per household)	5.7		
Total households (000)	4		
Total current consumption (000 M^3/Year)	526		
Total household consumption (M^3/month)	10.4		
Daily consumption per capita (L/C/D)	60		
Water Supply	**Yearly M^3 (000)**	**Yearly NIS (000)**	
Piped water	298	1640	
Tankers	76	1140	
Rain water	152	4215	
Total water supply	**526**	**6995**	
Recurrent Cost of Water to Households	**Monthly Consumption m^3**	**Cost Per Household (NIS/m^3)**	**(NIS/month)**
Piped water	5.9	5.5	32
Tankers	1.5	20	30.0
Rain water	3.0	27.7	83
Total monthly consumption and cost of water per household	**10.4**		**146**
Affordability	**Year 2002**		
Average Yearly Income (poverty line) NIS	19200		
Average Yearly Water Cost Per Household	1750		
Percent of Water Related to Annual Income	9%		

Before the intifada 21% of the population was living under the poverty line (World Bank Report, January 2001).

Assumptions:

1. Average daily per capita consumption in the Hebron area is estimated at 60 L/C/D, based on figures quoted by village council heads.
2. Average cost of 1 M^3 of piped water is NIS 5.5 as per the village council questionnaires
3. In addition to a recurrent cost of 1000NIS/Year for its maintenance, households without piped networks normally invest about NIS 5000 in a 40-80 $(M)^3$ cistern.
4. The cost of rainwater is the estimated cost of maintaining the cistern
5. Price of 1 m^3 of Tankered water in the Hebron area is averaged at 20 NIS. Some price variations between 15 to 20 NIS between winter and summer.
6. Households receive an average of 5.9 m^3/month of piped water (per village council questionnaires and WBWD figures, about
7. 34L/C/D from network. Cisterns supply 66.66% or 17.3L/C/D of the 26 L/C/D daily needs

deficit, while water tankers supply 33.33% or 8.7 L/C/D of deficit.
8. Persons per household figure is the West Bank average as provided by PCBS.

Water collection cisterns are common and widely used as a means to harvest the rainwater and store water supplied by tankers. Households typically have water cisterns ranging in size between 40 to 80 cubic meters. Water networks in the Hebron Southwest cluster provide about 34 l/c/d from the total amount consumed of 60 l/c/d. The deficit is substituted from water from cisterns and water tankers. The cisterns make up around 66.7% of the deficit, which is equal to 17.3l/c/d and cisterns 33.3% or 8.7l/c/d. These percentages are the result of rigorous checking with the local village councils. The water tankers are privately owned, normally operated by individuals owning a truck (and in most cases not licensed or safe to transport potable water).

The population figures considered in the above analysis refer to the total population in the cluster and not just those connected to the water networks, which account to over 90% of the households.

3. Cost of Establishing the JSC

BASIC QUESTION: WHAT IS THE COST OF PROVIDING THE SERVICE?

Table 7.3 details the start-up costs of the proposed JSC for the first year of operations excluding the construction cost of the network. Construction cost for this cluster in Phase I is estimated at $4.5 million or NIS 20.25 million as per the project design. We expect that the funding source for the start-up costs will be in the form of a grant, while future investment needs will be completely funded by the JSC itself.

It is expected that the local households within the JSC's jurisdiction will share some of the start-up costs in the form of connection fees to be collected in the year 2003 (one year prior the commissioning of the JSC). We estimate that 70% of the total population in 2003 will pay an average of NIS 720 in connection fees (total contribution of NIS 2.2 million). This is a high participation rate due to the experience of the communities with water networks. All the connection fees to be collected in later years (2004 and after) will be counted as part of the JSC revenues. It is worth noting our assumption that all households in this cluster will have to pay the connection fees, even those that are connected to the old networks.

Table 7.3: Start-up Costs / JSC - Hebron Southwest

Management:	**NIS(000)**	**US$(000)[1]**
One vehicle (small pickup truck)	119	26
Computers, monitors, printers, fax and photocopier	60	13
Office furniture and refurbishing	45	10
Field communication systems (approximately 6 devices)	12	3
First time purchase of office supplies	12	3
Billing/accounting software (including installation, training, and support)	70	16
Sub-Total	***318***	***71***
Operations & Maintenance:		
Various machines (welding, threading, asphalt cutting)	70	16
Wrenches, drills, and general tools	12	3
Equipment (leak detection, pipe detection, pipe testing)	66	15
Portable electric generator	16	4
Civil works equipment (compactor, roller, cement mixer …etc)	15	3
Chlorination testing equipment	11	2
Spare parts	60	13
Sub-Total	***250***	***56***
Working Capital (Recurrent Fixed Costs for first six months)	***351***	***78***
Total Start-up Costs:	**919**	**204**

(1) Exchange rate: $1 = NIS 4.5

Table 7.4 below lists the recurrent costs of the proposed JSC for the first year of operations, excluding the cost of bulk water. Except for "Network Maintenance" and "Depreciation Expense", all amounts are extrapolated from the actual costs of the Jenin Joint Services Council for the first two years of operation. "Network Maintenance" is estimated at 1.5% of the total value of the water network (NIS 20.25 million), and "Depreciation Expense" is estimated at 3% of the total value of the water network plus the value of other management and operations assets as detailed in Table 7.3 (NIS 20.8 million).

Table 7.4: Recurrent Yearly Fixed Costs/JSC – Hebron Southwest

Staffing Costs	**NIS(000)**	**US$(000)[1]**
General Manager	46	10
Accountant	39	9
Administrative Assistant	33	7
Janitor	21	5
Technician	33	7
Warehouse Officer	33	7
Meter Reader	26	6
Total Staffing Costs	***231***	***51***
Cash Operations & Management Costs		
Network Maintenance	304	68
Transportation	40	9
Warehouse Costs	40	9
Stationery/Supplies	10	2
Utilities	10	2
Advertisement/Printing	7	2
Office Rent	40	9
Office maintenance	7	2
Audit Fees	8	2
Miscellaneous	5	1
Total Cash O & M Costs	***471***	***105***
Sub-Total (Fixed Cash Costs)	***702***	***156***
Depreciation Expense	***625***	***139***
Total Recurrent Fixed Costs:	**1,326**	**295**

(1) Exchange rate: $1 = NIS 4.5

4. Pricing Scenarios and Affordability

Basic question: Will the tariff levels required to cover JCS costs be affordable?

Table 7.5 below summarizes various pricing scenarios at different water consumption levels. From this table it is anticipated that water sales will begin generating surplus (after depreciation) when a minimum of NIS 6.5 per m^3 is applied to an average consumption of 60l/c/d. It is worth noting that the scenarios below do not take into consideration the NIS 720 for the connection fee to be collected by the JSC. This will generate additional revenue for the JSC to be used to fund additional system expansions and future investment needs.

Table 7.5: Pricing Scenarios / JSC - Hebron Southwest

Population = 26,308 in 2004:

Price NIS/M^3	L/C/D	Yearly Sales ($000M^3$)	Yearly Revenue NIS(000)	Uncollected Bills (10%) NIS(000)	Yearly Water Purchases NIS(000)	Fixed Cash Costs NIS(000)	Surplus (Deficit) Before Dep. NIS(000)	Dep. Expense NIS(000)	Surplus (Deficit) After Dep. NIS(000)
4.50	40	307	1,383	138	878	702	(335)	625	(959)
	60	461	2,074	207	1,316	702	(151)	625	(776)
	80	615	2,766	277	1,755	702	32	625	(592)
5.50	40	307	1,690	169	878	702	(58)	625	(683)
	60	461	2,535	254	1,316	702	263	625	(361)
	80	615	3,380	338	1,755	702	585	625	(39)
6.50	40	307	1,997	200	878	702	218	625	(406)
	60	461	2,996	300	1,316	702	678	625	54
	80	615	3,995	399	1,755	702	1,138	625	514

Assumptions:

- JSC is responsible for the internal water network only.
- 80% of the population is connected to the system.
- Unaccounted-for water is 20% of total water sales.
- Price of bulk water equals to NIS 2.38/M^3.
- Depreciation expense is for the internal network plus other O&M assets (NIS 20,818,000 X 3%).
- Total fixed costs include 1.5% of network cost for yearly repairs and maintenance.

In terms of affordability of JSC's services, the various prices per cubic meter applied in table 6.5 above are much less than the average price that is currently being paid by households in this cluster. Also, the connection fees of NIS 720 are consistent with the fees that are currently being charged by the neighboring village councils/towns that have water networks, and affordable to the households (at only 3.7% of their income at poverty line). Table 6.6 shows that the average projected yearly water bill per household (at an average tariff of NIS 5.5/m^3) is only 3% of the annual household income at the poverty line level of NIS 1600 per month. (According to a recent World Bank Report on Poverty

in the West Bank and Gaza of January 2001, 21% of the West Bank households were earning an income below the poverty line right before the beginning of the Al-Aqsa intifada). The conclusion here is that at least 79% of the population can afford the cost of water (at 3% of their income at poverty line) through a water network. If the average tariff charged to consumers is increased to NIS 6.5/m^3, the average yearly household water bill will increase to NIS 737, representing 3.8% of the annual household income at the poverty level.

Note also that the systems are in surplus at NIS 5.5/M3 at expected consumption levels before depreciation is included. Since new systems will not require the cash for system replacement that an existing system would, the full depreciation does not have to be applied for some period of time. This will require discussion with PWA on how to apply their tariff policy, which includes depreciation.

Table 7.6: Affordability of the JSC's Water Services / JSC - Hebron Southwest

	2004	2005	2006	2007	2008
Avg. Yearly Bill/ Water Meter (NIS)	624	624	624	624	624
Yearly Household Income (Poverty Line) (NIS) (1)	19200	19200	19200	19200	19200
Avg. Yearly Bill as % Poverty Line Income	3%	3%	3%	3%	3%

(1) Before the intifada 21% of the Palestinian population was living under the poverty line (World Bank Report, January 2001).

It is worth noting that the intifada has adversely affected the average household income, and thus the percentage of poor households has increased drastically.

5. Financial Projections

Basic question: Is the JSC financially a self-sustainable enterprise?

The projected financial statements for the JSC are included in Annex 4. Table 7.7 below includes a summary of the various factors that went into building the financial model, as well as some financial indicators that resulted from running the financial model.

It is assumed that each individual connected to the water network will be supplied with an average of 60 liters per day. This assumption is in line with the PWA's objective of supplying the local communities with piped water, as well as conserving the limited amount of bulk water that is available under its administration.

It is clear that an average tariff rate of NIS 5.5/m^3 (as assumed in the model) will not be enough to cover the JSC's recurrent costs, although the cash flow will be positive. This is mainly due to the relatively small population size in this cluster coupled with a relatively large investment in the network. Once we apply a higher average tariff rate, such as NIS 6.5/m^3, the financial viability of the JSC will be supported by the all the financial results. Table 7.8 below indicates the price per m^3 which the JSC is required to charge in order to generate enough revenue to break even, without taking into consideration the revenue from connection fees.

Table 7.7: Summary of Projections for Five Years / JSC - Hebron Southwest

Population	**2004**	**2005**	**2006**	**2007**	**2008**
Population (000)	26	27	28	29	31
Average Household Size	5.7	5.7	5.7	5.7	5.7
Population Served (000)	21	23	25	27	28
Service Levels					
% Population Served [(1)]	80%	85%	88%	90%	91%
Water Connections (one/hh) (000)	4	4	4	5	5
Add'l Connections per year (000)	1	0	0	0	0
Per Capita Consumption (l/d)[(2)]	60	60	60	60	60
Water Purchases & Sales					
Water Billing (000 M^3 per year)[(3)]	461	509	547	581	609
Unaccounted for Water %	20%	20%	20%	20%	20%
Unaccounted for Water (000 m^3/year)	92	102	109	116	122
Water Purchases (000 M^3 per year)	553	611	657	697	730
Average Tariffs & Costs					
Avg. Cost of Bulk Water (NIS/m^3) [(4)]	2.38	2.38	2.38	2.38	2.38
Avg. Water Tariff (NIS/m^3)[(4)]	5.50	5.50	5.50	5.50	5.50
Avg. Monthly Bill/ Water Meter (NIS)	57	57	57	57	57
Avg. O&M Costs /m^3 Purchased (w/o Dep.)	1.27	1.21	1.19	1.18	1.19
Avg. O&M Costs /m^3 Sold (w/o Dep.)	1.52	1.46	1.43	1.42	1.43
Avg. O&M Costs /m^3 Purchased (w/ Dep.)	2.40	2.24	2.14	2.08	2.04
Avg. O&M Costs /m^3 Sold (w/ Dep.)	2.88	2.68	2.57	2.50	2.45
Financial Ratios					
Current Ratio (CA/CL)	5	6	7	8	8
Return on Fixed Assets (NP/NFA)	0.00	(0.00)	(0.00)	(0.00)	(0.00)

(1) Estimated percentage based on the community experience with water networks.
(2) Assuming that the network will provide 60 Liter/Capita/Day.
(3) Assuming that the yearly per capita consumption is from the new water network.
(4) Average prices for year 2000.

Table 7.8: Break-even Point [1] / JSC - Hebron Southwest

Coverage	Price per M^3 (NIS)
Cash O & M	4.86
Cash O & M plus depreciation	6.37

(1) Based on demand of 60 liters per capita per day.

6. Financial Risks

Basic question: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?

The potential financial risks may be summarized as follows:

1. The JSC is made additionally responsible for the main transmission line and pumping station, resulting in higher capital investment for the JSC.
2. The population served drops to 50% of total population in 2003 and only increases to 85% in 2007.
3. The capita supply of water from the network is limited to only 40 l/c/d.
4. The average water tariff charged to the consumers is only NIS 4.5 per m^3 in 2003.

The financial viability of the JSC in this cluster is not affected by any of the above risks, occurring individually. When more than one risk occurs at the same time, a net loss may result in all or part of the five years under consideration. For example, if the JSC is given the responsibility of the main transmission line coupled with a drop in population being served (50% only connect to the network), a net loss and negative return on net assets is expected to result in the year 2003 only, while there would be positive cash flow returns in all following years. A net loss is expected to occur in all years if the JSC takes responsibility for the main transmission line and if per capita water supply drops to 40 l/c/d.

In general, the size of the population in this cluster renders it less sensitive to any of the above-mentioned risks, occurring individually.

C. Recommendations:

1. The communities in this cluster are willing to join in the proposed JSC. Their enthusiasm stems from their desire to have an adequate and reliable water supply system. It is recommended that the proposed JSC be established, despite the fact that some issues that need to be resolved, such as debts, state of existing networks, etc.)

2. It is recommended to incorporate the appropriate human resources that are found locally. This will form an additional incentive for the local communities to participate and be involved in the process of establishing and operating the JSC.

3. Some of the village council representatives have demonstrable leadership characteristics. It is also recommended that these people be drawn into the process of establishing the JSC in order to lead the way for others to follow.

4. In terms of financial viability, it is recommended that the issues of debt and existing house connections be resolved, with the assistance of both the PWA and the MoLG. These two issues have a direct impact on the number of houses to be connected to the new network, which in turn is a major factor that determines the financial viability of the proposed JSC.

5. It is recommended that the PWA play the role of monitoring and providing oversight for establishing the water tariff system for the JSC. The water tariff structure, as envisaged by the PWA, shall include: the JSC operating costs, the water system's expansion, the price of bulk water, depreciation, and major maintenance costs.

6. It is recommended that many of the above issues be resolved at the start of the project, by adopting a participatory approach with the communities themselves in order to mobilize all their resources and empower them to become the owners of this project.

Chapter 8: Cross-Cutting Issues and General Recommendations

1. The number of proposed JSCs

The following is based on the discussion held in Jerusalem on Wednesday, February 13, 2002, with the EHP team that carried out the technical feasibility study.

i. Nablus Area

For the purposes of establishing the JSC, it is recommended that the two Nablus clusters be combined into one cluster (to be called "the combined Nablus cluster") with the villages of Beit Dajan and Beit Furik taken out of the EHP scope of work. The EHP team's decision is based on the fact that the two villages are geographically distant from the rest of the villages in the Nablus combined cluster and their supply of water could come from the well in Beit Dajan (a separate source of water), which is envisaged to be sufficient to supply water to the two villages. The Nablus combined cluster is likely to be supplied with water from the Rujeib well. The well is scheduled to be drilled during the month of March 2002. Furthermore, considering the number of villages and size of the population in the individual villages in the Nablus clusters, it may be more feasible, from a management point of view to combine both clusters into one JSC. This will result in a more efficient JSC, both managerially and financially. This recommendation is further reinforced by the fact that all the villages

in the Nablus Combined cluster have been lately organized by UNDP under one regional planning committee.

Table 8.1 provides the pricing scenarios for the Nablus Combined Cluster.

Table 8.1 Pricing Scenarios / Nablus Combined Cluster

Population = 55,540 in 2004:

Price NIS/M^3	L/C/D	Yearly Sales ($000M^3$)	Yearly Revenue NIS(000)	Uncollected Bills (10%) NIS(000)	Yearly Water Purchases NIS(000)	Fixed Cash Costs NIS(000)	Surplus (Deficit) Before Dep. NIS(000)	Dep. Expense NIS(000)	Surplus (Deficit) After Dep. NIS(000)
4.50	40	568	2,554	255	1,621	1,450	(772)	1,323	(2,094)
	60	851	3,831	383	2,432	1,450	(433)	1,323	(1,755)
	80	1,135	5,109	511	3,242	1,450	(94)	1,323	(1,417)
5.50	40	568	3,122	312	1,621	1,450	(261)	1,323	(1,583)
	60	851	4,683	468	2,432	1,450	333	1,323	(989)
	80	1,135	6,244	624	3,242	1,450	928	1,323	(395)
6.50	40	568	3,690	369	1,621	1,450	250	1,323	(1,073)
	60	851	5,534	553	2,432	1,450	1,100	1,323	(223)
	80	1,135	7,379	738	3,242	1,450	1,949	1,323	627

Assumptions:

- JSC is responsible for the internal water network only.
- 70% of the population is connected to the system.
- Unaccounted-for water is 20% of water sales.
- Price of bulk water equals to NIS 2.38/M^3.
- Depreciation expense is for the internal network plus other O&M assets (NIS 44,084,000 X 3%).
- Total fixed costs include 1.5% of network cost (including the reservoir) for yearly repairs and maintenance.

Table 8.2: Break-even Point (1) / JSC – Nablus Combined Cluster

Coverage	Price per m^3 (NIS)
Cash O & M	5.06
Cash O & M plus depreciation	6.68

(1) Based on demand of 60 liters per capita per day.

It is likely that the supply of water would be 60 l/c/d, depending on the yield of the well in Rujeib. From Table 8.1, it is clear that this will result in a net deficit in the financial projections of the Nablus combined cluster. This is mainly due to the relatively high depreciation cost of the water distribution system, uniformly applied from day one. This could be a topic for discussion with the PWA, whereby another mode for depreciation of the system is used that takes into consideration that full depreciation of a new system does not have to be applied for the first few years. This

could change the outcome in Table 8.1 to a positive one at NIS 6.5 and 60 l/c/d water supply.

ii. Hebron Area

For the purposes of establishing the JSC, the form of the two Hebron clusters will remain almost the same as originally proposed and studied by ANERA. The Hebron Southwest cluster is likely to have the first JSC established within the group of villages in the cluster (without Tarqumia and Ithna). Due to budget as well as time constraints, the EHP engineering design team took the decision to start implementing new water distribution systems (Phase I) within the villages in the Hebron clusters that did not have any water network in the past. Within the Hebron Southwest Cluster, these villages are: Beit Awwa, Sikka, Tawas, Al-Majd, Deir Al-Asal Al-Tahta, Deir Al-Asal Al-Foqa, Iskeik, Beit Ar-Rush Alfoqa, Beit Ar-Rush At-Tahta, Beit Misrim, Al-Burj, Khirbet Beit Salama. Tarqumiah and Idhna are the two villages in Hebron Southwest cluster that already have reasonably functioning water distribution networks and the replacement of the existing water networks in them would bring the overall construction cost far beyond current budgets. Phase I will also include two communities from Hebron Northwest cluster, namely Beit Ulla and Al-Jaba'a for the same reason that Al-Jaba'a does not have a water distribution system while Beit Ula has a deteriorated water distribution network.

It is recommended that the JSC for the Hebron Southwest cluster be established with Idhna and Tarqumia represented as observer members on the board until such time as their networks are either replaced with new ones or renovated through external funds (USAID, DFID, etc.). As for the Hebron Northwest cluster, it is recommended that no decision be taken to establish a JSC at this stage, as Beit Ula and Jala are the only two communities that will get new networks in Phase (I). It will have to be decided only after an assessment of the physical condition of the networks in the towns and villages originally included in this cluster has been carried out by the EHP technical teams.

2. The Regional Water Utilities

The role of the Regional Water Utilities and the Technical Units (being planned to be set up by GEKA with funds from the World Bank) warrant further clarifications from the PWA, in particular, as to how the JSCs should be configured to co-exist with the Technical Units and how will they maintain their managerial and financial independence over their area of operations.

The PWA would like to see the JSCs as part of the future Regional Water Utilities and sees the necessity to have an MOU signed with the JSCs in order to commit them to integrate in the future within the Regional Water Utilities. However, the organizational structure showing the type of relationship that is envisaged between the regional water utilities, the technical units and the JSCs has yet to be drawn up.

Also, a clear commitment needs to be made by the PWA that the proposed JSC would not be dissolved or absorbed within larger entities in the near future, which would render the whole institutional development program an unjustifiable investment.

One form of organizational structure may be recommended whereby JSCs for water and sanitation, in any one area, become organized under the umbrella of a regional water utility, whether in the north, middle or south of the West Bank. The JSCs will remain as the managerial units of the water distribution networks within their areas of operation. The Technical Units will provide the JSCs with the necessary technical backup support, such as in expanding the networks, assisting in tariff setting and monitoring as well as general supervision of the JSCs technical/contractual work.

3. Future Responsibilities of the WBWD

The division of responsibilities between the WBWD and JSC need to be determined at an early stage in the design of the establishment of the proposed JSCs. The WBWD believes that it should continue to be responsible for main transmission lines and pump stations, while the JSC would be responsible for internal networks and water facilities within the villages represented in the JSC. This is being supported by the PWA as well as the MoLG.

Any decision in this respect will certainly have an impact on the organizational structures of the JSC (i.e. size and quality of the required manpower), budget allocations, equipment (type and number), and training needs of the JSC. This will also have major implications on the operating costs of the JSC, operation and maintenance cost and the extent of stock of spare parts that need to be considered in establishing the JSCs.

It is recommended that, in general terms, the JSC become responsible for managing the village/town level water networks. In the cases where there exists a main supplier of bulk water (as is the case for the proposed Hebron JSCs) the management of the transmission lines and water facilities within the villages/towns in the JSC should remain the responsibility of the bulk water supplier. The JSCs would fully pay for the price of bulk supply of water.

In the case where the JSC is the operator of its source of water (i.e. the source itself remains under the ownership of the PWA, as may be the case in the Nablus combined cluster), then the JSC would be made responsible for the operation of the well, transmission lines, pumping, storage facilities as well as the internal the internal village networks. In such a case, the JSC will have to be charged a nominal fee to be paid to the PWA in return for its right to use and pump the water from the assigned well. This will enable the PWA to rehabilitate the well in the future as the need may arise. Indications from PWA are that the WBWD will operate the bulk systems in Nablus as well as Hebron.

4. Water Debts for Bulk Water

Some of the communities in the Hebron clusters have existing water networks in their villages/towns. WBWD records show that all of these communities (except Kharas) have been accumulating water debts (in the order of millions of NIS). Part of the reason for the accumulated debts is that the metered amount of bulk water differs considerably from the accumulated amounts recorded in the individual meters. This is due to the fact that the water networks suffer from considerable leakage and the inadequate recording of water dues by the village councils.

It is recommended that the issue of past debts be settled at an early stage. This could have far-reaching consequences on the success of establishing JSCs in Hebron. Individual households would have to settle their debts before they are considered for connection to the new and or rehabilitated water networks. The amount of debts has to be negotiated, with incentives to encourage the people to settle them and to overcome the fact that the water consumption records with the village councils are not necessarily correct and that some of the recorded water never reached the consumers at the first place.

Table 8.2 Sample of Accumulated Debts for Communities in Hebron Area from January 2000 through June 2001

Community	*AMOUNT OF DEBT (NIS)*
Beit Ummar	3,460,067

Northwest	
Surif Northwest	512,303
Nuba Northwest	527,341
Sub-Total Hebron NW	4,499,711
Tarqumia Southwest	1,302,400
Idhna Southwest	861,511
Deir Samit Council Southwest	593,141
Beit Awwa Southwest	427,632
El-Majd Committees Southwest	193,864
Sub-Total Hebron SW	3,378,548
TOTAL (NIS)	7,878,259

5. Policy for Water Tariffs

Regarding the setting of water tariffs, the PWA's policies in this respect may be summarized as follows:

- The PWA prefers to adopt a progressive tariff system for water services.
- Also, the PWA supports providing some benefit for the poor and/or less advantaged customers, which has to come from cross subsidies.
- The PWA is willing to assist JSCs in enforcing bill collection, and would support them in taking legal actions and disconnecting the service in cases of non-payment.
- PWA acknowledges that the tariff policy for water must achieve the following objectives:
  a. Ensure the application of cost–recovery principles;
  b. Ensure price equity among different consumers;
  c. Encourage an efficient use of water.

It is worthwhile to mention that the financial analysis in this report clearly indicates that the cost of system depreciation is a major factor influencing the pricing scenarios for the JSCs in this study. Considering that there will be limitations on the amount of bilk supply water provided through PWA as well as the ceiling for setting water tariff

amounts. This leads us to recommend that, together with PWA, depreciation of the new water distribution systems, realistically speaking, does not have to be applied for the first few years when cash for system replacement would not be needed.

It is recommended that the role of the PWA be regulatory as far as water tariffs are concerned. The PWA shall set an appropriate water tariff system suitable for the conditions of each JSC (comparison between the proposed Hebron clusters and the combined Nablus cluster is a good example). The PWA shall provide overall oversight to ensure that the above-mentioned objectives are being met. Also, through the proposed technical units, the PWA could give guidance to the proposed JSC to set their own water tariff to meet the above objectives and operate in a financially viable way.

Annex 1
Detailed Analysis of VC Questionnaires for Nablus Central Cluster

Geographical Location Cluster of communities lying to the central region of the Governorate of Nablus

Communities Included: 12 communities: Burin, Madama, 'Asira al-Qiblyha, 'Iraq Burin, Til, Sarra, Urif, Rujeib, Beit Dajan, Beit Furik, 'Awarta, and Einabus.

Population: 32,899 (PDBS figures of 1997)

A. Institutional Assessment

1- Feasibility of the JSC:

Basic question: Are the conditions favorable for the village joining the proposed JSC?

Results indicate the following findings:

1. All of the Village Councils members (100%) surveyed expressed their support for establishing a JSC, as well as expressed willingness for playing an active role and willingness to participate within a JSC.

Table 1: VCs Support to JSC and the role they will be playing

VCs	support idea	Playing active role
Madama	Yes	Yes
Awarta	Yes	Yes
Burin	Yes	Yes
Asira al-qiblyha	Yes	Yes
Til	Yes	Yes
Urif	Yes	Yes
Sarra	Yes	Yes
Iraq Burin	Yes	Yes
Einabus	Yes	Yes
Beit Furik	Yes	Yes
Beit Dajan	Yes	Yes
Rujeib	Yes	Yes

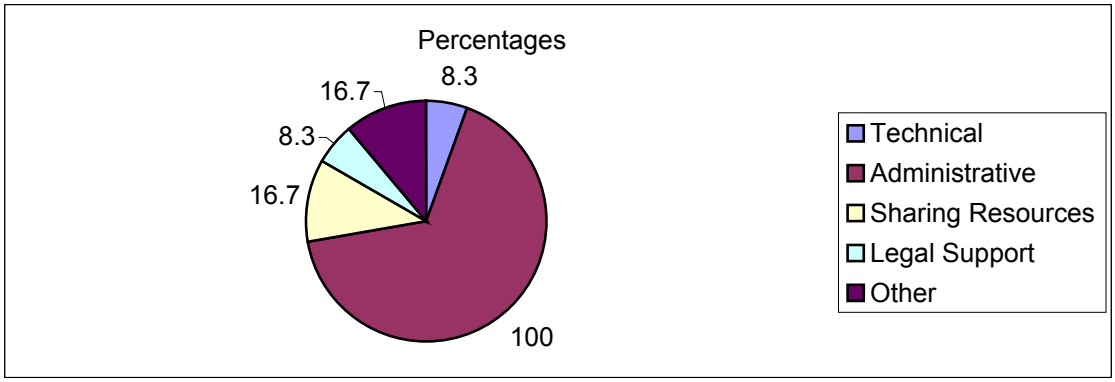
2. All of the Village Councils members (100%) surveyed expressed their willingness to organize in a JSC and share resources and experiences; to the extent they may be available, in different areas (technical, administrative, resources, and other), especially in the managerial and administrative areas (90%). The majority

of these VCs do not have tangible assets, related to the water and sanitation services that may be shared.

Table 2: Areas where VC Support to JSC (Question 2 of VC Questionnaire)

VCs	Technical	Administrative	Sharing Resources	Legal Support	Assets	Others
Madama	Yes	Yes				
Awarta		Yes				
Burin		Yes				
Asira al-qiblyha		Yes				
Til		Yes			Yes	
Urif		Yes				
Sarra		Yes				Yes
Iraq Burin		Yes				Yes
Einabus		Yes				
Beit Furik		Yes	Yes		Yes	
Beit Dajan		Yes	Yes	Yes		
Rujeib		Yes				

Graph Related to Table 2: Areas where VC Support to JSC (Question 2 of VC Questionnaire)



3. All of the VCs, expressed willingness to cooperate at the inter-communal level, and do not see any obstacles in participating in such JSCs.

Table 3: Rating of Level of Cooperation According to VC

Area	Level of cooperation
Madama	Excellent
Awarta	Good

Burin	Excellent
Asira al-qiblyha	Excellent
Til	Good
Urif	Excellent
Sarra	Good
Iraq Burin	Good
Einabus	Excellent
Beit Furik	Excellent
Beit Dajan	Excellent
Rujeib	Good

4. All (100%) of the VCs had conducted joint projects with their counterparts in different areas of education, health, roads, water, services, and other.

Table 4: Joint Projects in Cluster VCs

Area	Conducted any joint projects	Education	Health	Roads	Water	Services	Other
Madama	Yes	.	.	.	.	.	Yes
Awarta	Yes	.	.	Yes	.	.	.
Burin	No	.	.	.	.	.	.
Asira al-qiblyha	Yes	Yes	Yes	Yes	.	.	Yes
Til	Yes	Yes	.	Yes	.	Yes	.
Urif	Yes	.	.	.	.	.	Yes
Sarra	Yes	Yes	Yes	Yes	.	Yes	.
Iraq Burin	Yes	Yes	Yes	Yes	.	Yes	.
Einabus	Yes	.	.	Yes	.	.	Yes
Beit Furik	Yes	.	Yes	Yes	.	.	.
Beit Dajan	Yes	.	.	Yes	Yes	.	Yes
Rujeib	Yes	.	.	.	.	Yes	.

2- Governance of JSC

Basic question: What is the ideal structure and form of the JSC?

This part of the study dealt with the ideal structure and form of JSC. Answers of questions (8-17) reveal the following:

1. Respondents vary in their opinion regarding the representation of MLG or PWA. While 75% of the respondents support PWA representation on the proposed JSC Board of Directors, 50% of them support MLG being on the JSC Board, and 16.6% opted for the Ministry of Environment. Other entities such as Professional associations or NGOs or others did not have any support to be represented.

Table 5: Cluster VCs Views in Other Entities Representation on JSC Board

	PWA	Ministry of Envrnmt.	Ministry of Local Government	Professional associations	NGOs	Others
Madama	Yes	.	.	.	.	.
Awarta	Yes	.	.	.	.	.
Burin	Yes	.	.	.	.	.
Asira al-qiblyha	Yes	.	.	.	.	.
Til	.	.	Yes	.	.	.
Urif	Yes	.	Yes	.	.	.
Sarra	.	.	Yes	.	.	.
Iraq Burin	.	.	Yes	.	.	.
Einabus	Yes	.	.	.	.	.
Beit Furik	Yes	.	Yes	.	.	.
Beit Dajan	Yes	Yes	Yes	.	.	.
Rujeib	Yes	Yes	.	.	.	.

2. Regarding the representation status of the above entities in the JSC, 55% of respondents supported PWA representation as advisor, while 33% as observer. At the same time, 67% of MLG supporters indicated that its status should be one of an advisor, while the other 33% opted for it as an observer.

Table 6: Cluster VCs Views on Roles of Other Entities on JSC Board

VCs	MLG	PWA	Entities National
Madama	Advisory	Other	Observer
Awarta	Advisory	Advisory	Other
Burin	Observer	Observer	Observer
Asira al-qiblyha	Observer	Advisory	Observer
Til	Advisory	Advisory	Other
Urif	Advisory	Advisory	Advisory
Sarra	Advisory	Advisory	Other
Iraq Burin	Advisory	Advisory	Other
Einabus	Observer	Observer	Advisory
Beit Furik	Observer	Observer	Advisory
Beit Dajan	Observer	Advisory	Advisory
Rujeib	Observer	Advisory	Observer

3. Findings reveal that 58% of the VC surveyed indicated that the ideal number of the proposed JSC should be 11 members, 33% indicated the number opted for 15, while one council (Rujeib) opted for the ideal number not to exceed 5 members. The majority of the respondents (92%) opted for a range between 11-15 members.

Table 7: Cluster VCs Views Workable Number of Members on JSC Board

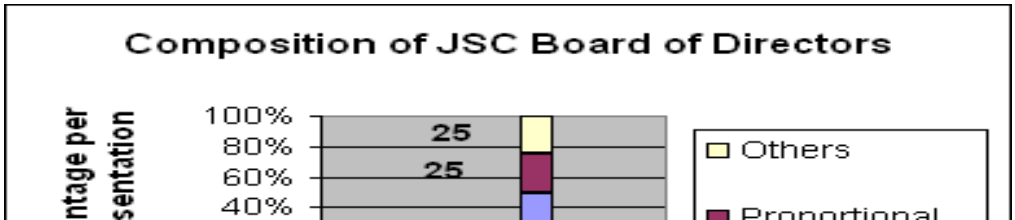
Area	Workable number
Madama	11 members
Awarta	11 members
Burin	15 members
Asira al-qiblyha	11 members
Til	11 members
Urif	15 members
Sarra	11 members
Iraq Burin	11 members
Einabus	15 members
Beit Furik	15 members
Beit Dajan	11 members
Rujeib	5 members

4. Regarding the composition (representative status) of VC members, 50% opted for one representative for each council, 25% for proportional representation, while the remaining 25% opted for a different form of representation, such as two members for each VC.

Table 8: Cluster VCs Views on Appropriate Representation/ Composition of VCs to the JSC Board

VCs	Regarding the composition
Madama	One representative
Awarta	Proportional representation
Burin	Others
Asira al-qiblyha	One representative
Til	Proportional representation
Urif	Others
Sarra	One representative
Iraq Burin	Others
Einabus	One representative
Beit Furik	Proportional representation
Beit Dajan	One representative
Rujeib	One representative

Graph Representing Table 8:

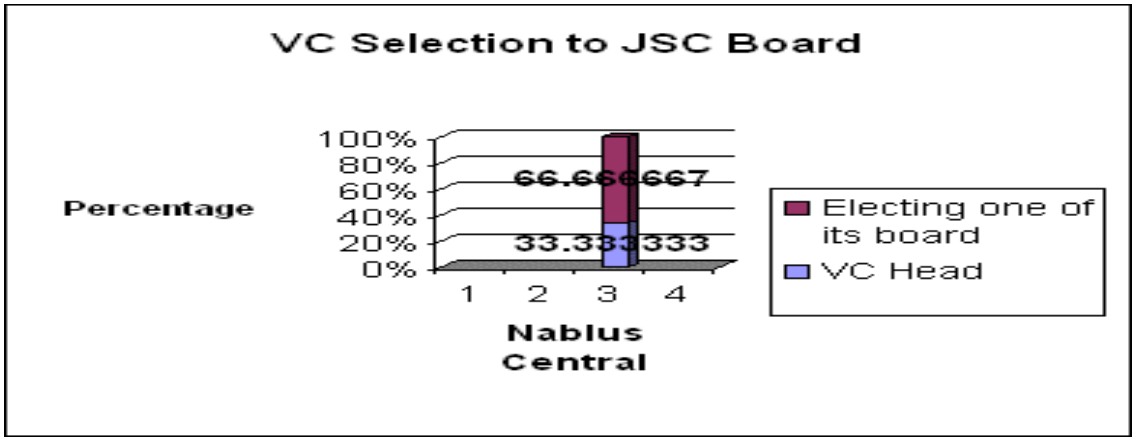


5. In terms of the selection criteria of the council representative, the majority of respondents (67%) preferred electing one to the board by the members themselves, while the remaining 33% preferred sending the VC head, as a representative in the proposed JSC Board of Directors.

Table 9: Cluster VCs Preferred Selection of VC Representation to the JSC Board

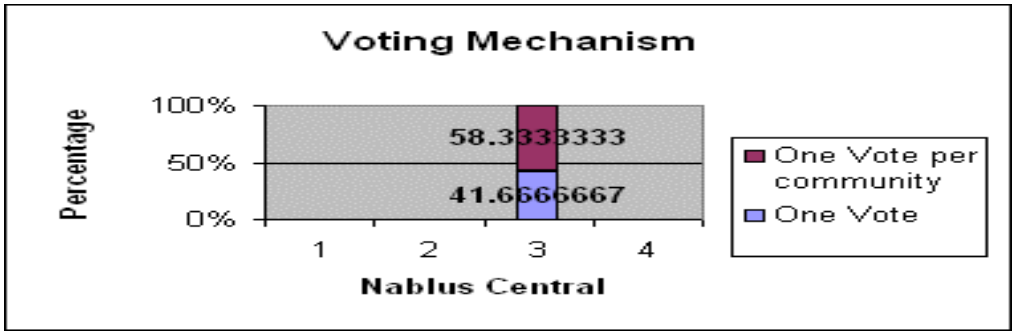
VCs	Preferred Selection Process
Madama	President
Awarta	electing one of its board
Burin	President
Asira al-qiblyha	electing one of its board
Til	electing one of its board
Urif	electing one of its board
Sarra	electing one of its board
Iraq Burin	electing one of its board
Einabus	electing one of its board
Beit Furik	President
Beit Dajan	President
Rujeib	electing one of its board

Graph Representing Table 9



6. Results show that all of the respondents (100%) identified their role in the JSC as active, and participating in the decision-making.
7. All of respondents (100%) encouraged the establishment of JSC to deal with water networks services in the current period

Graph Representing VCs Preferred Voting Mechanism on JSC Board



3- Existing Capacity

- *Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?*
- *Basic question: Are there existing management system for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)*

1. Regarding the availability of independent departments that deal with water service in the VCs, 90% revealed that their councils did not have any, while the remaining 10 %(Einabus and Rujeib) had such departments: a unit in Einabus, and a division at Rujeib. In this regards it is important to point out that the water unit at Einabus consist of an accountant, bill collector, and a technician. This team is responsible for an old, scraped and non-functioning water network

Table 10: Cluster VCs Having Water Departments

VCs	Have Water department	Classify
Madama	No	.
Awarta	No	.
Burin	No	.
Asira al-qiblyha	No	.

Til	No	.
Urif	.	.
Sarra	No	.
Iraq Burin	No	.
Einabus	Yes	Unit
Beit Furik	No	.
Beit Dajan	No	.
Rujeib	Yes	Division

2. No sanitation units are found in any of the VCs.

Table 11: Cluster VCs Having Sanitation Departments

VCs	Have Sanitation department	Classify
Madama	No	.
Awarta	No	.
Burin	No	.
Asira al-qiblyha	No	.
Til	No	.
Urif	No	.
Sarra	No	.
Iraq Burin	No	.
Einabus	No	.
Beit Furik	No	.
Beit Dajan	No	.
Rujeib	No	.

3. In terms of availability of physical resources to be used in the proposed JSC in the VCs surveyed, and since there are no departments dealing with water and sanitation services, no equipments, or relevant buildings were found in the majority of the VCs of the cluster. On the other hand, Beit Furik and Einabus proposed to offer the municipality building and one room respectively, to be used by the proposed JSC.
4. In terms of human resources, it is important to point out according to many official and private sector resources that some of the villages of this cluster especially Beit Furik and Beit Dajan have a relevant number of workforces with experiences in building water and sanitation networks.

Table 12: Cluster VCs Professional Background

Council	Experience in Years	Academic
Einabus	9	Diploma
Einabus	8	Diploma
Rujeib	3	Preparatory

5. Lists provided by the VCs regarding the existing situation of the management structure in terms of names, background, educational status, and experiences revealed the following:
   - Some kind of effective committees were found in some of the VCs board structure in villages like Sarra, Beit Dajan and Beit Furik, where the councils there consist of relevant number of members, relevant number of committees, and with some diversity in these committees. Other VCs had a smaller number of members, without any kind of division of works among members; lack of establishing any kind of adequate committees. Furthermore, members in these VCs were involved in running the daily operating and administrative affairs as employees, and, as a result, theses members have two roles, one as a representative, and another as an employee such as cashiers or accountants. This dual role weakens the internal control system. Since from an internal control point of view it is important to point out that the major function of the VC member is legislating and monitoring, while running the operating functions of VC affairs is the responsibility of salaried paid employees.

If the VC member misunderstands what his/her role in the council should be, a confusion of duties will follow and problems will start surfacing in running any proposed broader councils. So, it is important to take such a point into consideration when the proposed JSCs are established.

   - Limited managerial capacity, since according to the questionnaire, most of these councils do not have adequate staff (first or second level) in major fields especially technicians, engineers, in management, finance and accounting.
   - No existence of a relevant adequate managerial structure. According to lists attached, most VCs do not have departments, units, or division to deal with council affairs. Most of the staff, which runs these councils, is concentrated as employees

involved in several duties as accountants, maintenance people, and bill collectors.

- Lack of functional and managerial experiences in the fields of water and sanitation: technical and financial, since there are practically no departments, divisions, and units catering for such services. An exception is found in Einabus and Rujeib, which have Water and Sanitation units, managed by a small number of workers with a primary level of education and experience.
- Operating functions are distributed among the staff and VC members in Duma, ‘‘Awarta, Til, ‘Urif, and Einabus, which causes conflict of duties as mentioned above.

4. Water Sectorial Issues.

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

1. Except of Einabus and Rujeib, which have related units to deal with water services, there are no entities for providing water & sanitation services in this cluster
2. In terms of availability of ongoing or proposed projects dealing with water and sanitation services, practically, findings indicate that there was one water project in the Einabus VC, covering the periods (1990-1996), but was not implemented. Another proposed project relating to sanitation services was found in Rujeib, but since the project was located in area (C), the Israeli authorities did not issue permits for the implementation of the project

Table 13: Cluster VCs Water-Related Projects

Council	Project	Start	End
Rujeib	Sanitation		
Beit Furik	Closed Well		
Einabus	A project existed but was not implemented	1990	1996

3. Regarding the availability of sanitation services, there are no sanitation networks in any VC. Services in the form of cesspits were found at Madama and ‘Asira al-Qiblyha. Sanitation services in most VCs are currently provided through septic tanks and cesspools, which present serious health and environmental risks.
4. No adequate water supply sources for the village are found at any VCs.
5. In reference to the water supply and needs, results in this regard indicate that:
   - Except for ‘Awarta village, the quantity available in other VCs is not sufficient to meet the various basic needs of the population. While the average monthly water consumption for the cluster reaches 123600 cubic meters, the

sufficient monthly amount varies between 126000-180000 cubic meters. The above figures indicate that the monthly water deficit ranges between 2400-56400 M3 Thus, residents resort to buying their needed shortage from collection wells and, in some instances, from neighboring villages such as Nablus Municipality, Beita, and some from the Israeli Water Company (Mekorot) through water tanks. The above figures are based on personal judgments rather than scientific statistics.

- Villages of this cluster lack a piped water supply, since no water networks are available. This leads to severe water quality problems. All respondents considered the quality of available water to be poor. Reasons of such poor quality are attributed to environmental pollution.

6. Respondents pointed out that neither the Ministry of Health, nor concerned authorities were conducting any kind of regular tests regarding water quality.
7. No adequate water supply sources for the village are found

Table 14: Cluster VCs Monthly Water Consumption (M3) and Sufficiency (Questionnaire Answers)

Area	Monthly water consumption	Available Sufficient	Sufficient amount
Madama	8500	No	10000-15000
Awarta	15000	No	15000-20000
Burin	10000	No	15000-20000
Asira al-qiblyha	10500	No	15000-20000
Til	16000	No	More than 20000
Urif	4500	No	5000-10000
Sarra	12000	No	10000-15000
Iraq Burin	12000	No	5000-10000
Einabus	11000	No	10000-15000
Beit Furik	12000	No	10000-15000
Beit Dajan	3000	No	1000-5000
Rujeib	9100	No	10000-15000

Table 15: Cluster VCs Monthly Water Consumption (Questionnaire Answers)

Monthly Water Consumption (M3)	
Mean	10300
Minimum	3000
Maximum	16000
Sum	123600

5- Public Consultation and Participation

BASIC QUESTION: ARE THEREIN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

1. Experiences in building collection wells were found in 'Urif, 'Iraq-Burin, Madama, Beit Furik and 'Asira Al-Qiblyha.
2. Experiences in sanitation were found in: 'Asira Al-Qiblyha, Rujeib, and Beit Dajan.
3. There were other experiences for the remaining VCs in roads, education, health, and development.
4. Except of Madama, Rujeib and Einabus VCs, no experiences were found in water and sanitation areas Most VCs in this cluster have various experiences in public awareness activities. Findings indicate:
   - Experiences in sanitation aspects were found at Til VCs, where cesspit technology lectures were conducted.
   - Lectures and courses were conducted in most VCs in terms of agricultural development, the environment, health, and medical services.
   - Organization of group's work, public campaigns, and meetings were conducted in most VCs of this cluster covering different areas such as agriculture, education, cleaning environment, and health.

Table 16: Cluster VCs Experience in Public Consultation

Council	Experience	description
Urif	Health	Clinic
Til	Roads	
Urif	Roads	Agricultural Roads, Expanding entrance and placing gravel
Sarra	Roads	Roads
Einabus	Roads	Establishing and expanding Agricultural Roads
Asira Qiblyha	Roads	Internal
Beit Furik	Roads	In cooperation with the Palestinian Agricultural Relief Committees (PARC)
Awarta	Roads	Roads between Awarta and Beita and between Awarta and Aqraba
Madama	Roads	Agricultural Roads
'Iraq Burin	Roads	Roads
Asira Qiblyha	Health	Educational and Health Lectures
Einabus	Health	Clinic
'Iraq Burin	Health	Health

Beit Dajan	Roads	
Beit Furik	Health	Calling upon UNRWA employees to conduct medical days in Beit Furik
Burin	Roads	
Madama	Health	Conducting working days with the relief committees
Urif	Educational	Building ten classrooms with supporting walls for school
Asira Qiblyha	Educational	Constructing wall and classrooms
Madama	Educational	Participated in building ten classrooms for village school
Til	Educational	
Sarra	Educational	Educational
Beit Furik	Educational	Calling upon recent graduates to substitute for school teachers following closures
Einabus	Educational	Building classrooms
'Iraq Burin	Educational	Educational
Madama	Development	Community contribution in establishing high voltage station
Beit Furik	Development	First aid workshops with external organizations
Urif	Development	
Sarra	Health	Health
Urif	Wells	Building water tank for school and drilling 20 wells for residents
Einabus	Other	Expanding local village mosque
Urif	Other	Purchased land for building school and designed plans for internal water network and roads for the new entrance to Urif
Asira Qiblyha	Other	Solid Waste
Rujeib	Other	Solid Waste
Beit Dajan	Other	Solid Waste
'Iraq Burin	Wells	Wells
Madama	Wells	Contributing to drilling wells for water collection
Awarta	Wells	Supplying water tank to consumption at reduced (cost) prices to residents
Beit Furik	Wells	In cooperation with the Palestinian Hydrology group, built 100 agricultural wells and 50 for local consumption
Asira Qiblyha	Wells	

B. Financial Assessment

1- Tariff Policy & Subsidies

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

NOTE: There are no adequate water supply services in any of the VCs, with the exception of Rujeib & Einabus, and, to some extent, Til. As a result most of the respondents did not answer this section, since it does not apply to their situation. Answers of this section, if any, would constitute opinions rather than accurate facts. Findings indicate that:

1. In reference to who was responsible for setting water tariffs, 41.7% of the respondents (including of Rujeib, Einabus & Til), identified it to be their VCs. The remaining respondents did not answer this question.

Table 17: Cluster VCs Setting of Water and Type of Tariffs

Area	Setting Water Tariff	Type of tariff
Madama	.	.
Awarta	.	.
Burin	.	.
Asira al-qiblyha	.	.
Til	VC	Fixed Price per M3
Urif	.	.
Sarra	VC	Fixed Price per M3
Iraq Burin	VC	Fixed Price per M3
Einabus	VC	Fixed for all
Beit Furik	.	.
Beit Dajan	.	.
Rujeib	VC	Fixed Price per M3

2. The same respondents indicated that setting a fixed price per M3 was the appropriate type for such tariffs.
3. Except for Rujeib, operating expenses were recovered from collected fees. None of the remaining VCs agreed on this issue.
4. Direct collection was used for collecting Water charges in Einabus and Rujeib.
5. Jordanian Dinars and New Israeli Shekel are the currencies used at Einabus and Rujeib.
6. In regards to the bill format, and with the exception of Beit Furik, all preferred to apply one bill for water & sanitation charges.
7. In regards to adjusting water charges to reflect inflation, General Prices Level (GPL) Index, Einabus and Til adjusted for it, while Rujeib did not. The other VCs preferred such adjustments. It is important to point out that modifications would take place in cases where charges are set in NIS, and also if the prices were increased by the providers.

Table 18: Cluster VCs Having Mechanisms to Adjust to Cost of Living

VCs	Mechanisms to Adjust to Cost of Living
Madama	.
Awarta	.
Burin	.
Asira al-qiblyha	.
Til	Yes
Urif	.
Sarra	Yes
Iraq Burin	Yes
Einabus	Yes
Beit Furik	.
Beit Dajan	.
Rujeib	No

8. Modification to the GPL take place in the following invoice, with the same value change, except for Rujeib, where the modification take place within two months and at a higher percentage than the value changed.

Table 19: Cluster VCs Modification to Water Prices Hikes and Percentages of Adjustments

VCs	When do you modify the price of water	Percentage of Increase
Madama	.	.
Awarta	.	.
Burin	.	.
Asira al-qiblyha	.	.
Til	In the following invoice	Same as the value changed
Urif	.	.
Sarra	In the following invoice	Same as the value changed
Iraq Burin	In the following invoice	Same as the value changed
Einabus	In the following invoice	Same as the value changed
Beit Furik	.	.
Beit Dajan	.	.
Rujeib	Within two months	Higher then the value changed

9. Regarding the criteria concerning water connection charges, Rujeib and Einabus (16% of the respondents) add pipe costs to the subscription fees, while Til, Sarra, and ‘Iraq Burin prefer to add insurance costs to such criteria.

Table 20: Cluster VCs Criteria for Setting Water Fees

Area	Criteria for Setting Water Fees
Madama	.
Awarta	.
Burin	.
Asira al-qiblyha	.
Til	Subscription +Pipes + Insurance
Urif	.
Sarra	Subscription +Pipes + Insurance
Iraq Burin	Subscription +Pipes + Insurance
Einabus	Subscription Costs + Pipes
Beit Furik	.
Beit Dajan	.
Rujeib	Subscription Costs + Pipes

10. Except for Rujeib, where water connection fees are 240 NIS, there were no recorded opinions in this respect.
11. VCs vary in practices concerning mechanisms for enforcing payments. Einabus disconnects services, Rujeib resorts to payment in installments, while Til, Sarra, and ‘Iraq Burin prefer to follow legal procedures.

Table 21: Cluster VCs Mechanisms to Deal with Delinquent Payments

VCs	Mechanisms to enforce payment
Madama	.
Awarta	.
Burin	.
Asira al-qiblyha	.
Til	Legal process
Urif	.
Sarra	Legal process
Iraq Burin	Legal process
Einabus	Disconnecting Services
Beit Furik	.
Beit Dajan	.
Rujeib	Payment in installments

12. 41.7% of the respondents prefer benefiting poor consumers, while 25% do not prefer to do so. From a practical point, Einabus and Til allow for installments

and discount mechanisms, respectively. Beit Furik, 'Iraq Burin and Sarra prefer to follow discounts.

Table 22: Cluster VCs Mechanisms Support the Poor

VCs	Schemes to Benefit the Poor	Types of Schemes
Madama	No	.
Awarta	.	.
Burin	.	.
Asira al-qiblyha	No	.
Til	Yes	Discounts
Urif	.	.
Sarra	Yes	Discounts
Iraq Burin	Yes	Installments
Einabus	Yes	Installments
Beit Furik	Yes	Installments
Beit Dajan	.	.
Rujeib	No	.

3- Local Markets

BASIC QUESTION: WHAT IS THE SIZE OF THE MARKETS FOR WATER AND SANITATION SERVICES IN THE VILLAGE?

1. All of the village's residents of the cluster are served with water primarily through water tankers, and depend primarily on collection wells, during the winter season, in order to collect and store water. It is important to point out that such sources, especially water tankers, present serious health risks.

Table 23: Cluster VCs Water Sources (Questionnaire)

VCs	Water Tanks	Collection Wells	Reservoirs	Others
Madama	Yes	Yes	.	.
Awarta	Yes	No	.	.
Burin	Yes	Yes	Yes	.
Asira al-qiblyha	Yes	Yes	Yes	Yes
Til	Yes	Yes	.	.
Urif	Yes	No	.	.

Sarra	Yes	Yes	.	.
Iraq Burin	Yes	.	.	.
Einabus	Yes	No	No	.
Beit Furik	Yes	No	.	.
Beit Dajan	Yes	.	.	.
Rujeib	Yes	Yes	.	.

Table 24: Cluster VCs Average Monthly Water Consumption (M3) in Summer/ Winter

	Average in Summer	Average in Winter
Madama	10000	7500
Awarta	18000	15000
Burin	25	20
Asira al-qiblyha	25	20
Til	20000	15000
Urif	2150	1250
Sarra	15000	10000
Iraq Burin	15000	10000
Einabus	7000	4000
Beit Furik	15000	10000
Beit Dajan	4500	3000
Rujeib	11000	7000

Table 25: Cluster VCs Average Sectorial Water Consumption

Area	Sector	Connect to water meters	Consumption (M3)	non metered	Consumption (M3)
Madama	Households	600	9100	600	15
Awarta	Households	1480	320000	.	.
Burin	Industry	120	470000	.	.
Asira al-qiblyha	Commercial	.	150000	.	.
Til	Households	500	1000	75	2000
Urif	Households	1750	20000	.	.
Sarra	Households	800	12000	50	.
Iraq Burin	Organization	6	1000	.	.
Einabus	Households	93	15	4	.
Beit Furik	Households	60	170	15	380
Beit Dajan	Households	75	16	.	.
Rujeib	Households	250	5000	200	5000

2. Since no sanitation network is found in any of the VCs, all of the villages use cesspits Cesspools are infrequently dislodged by the septic tanks and consequently wastewater and septage are inadequately treated, which pose serious health and environmental hazards.
3. In terms of costing and the size of building wells, results indicate the following:
   - Cost of building water well in 'Awarta, Burin, Til, Urif, Sarra, and 'Iraq Burin, and Einabus, amount to less than 2000 NIS for a well ranging between 40-80 M3. While a similar-sized well costs between NIS 6000-NIS 8000 in the villages of Beit Furik and Beit Dajan. From a costing point of view, such costs are very high for village standards, in comparison to having a water network, taking into consideration operating and maintenance costs, which amount to an average 1000 NIS annually.

Table 26: Cluster VCs Cost for Building Water Well and Size

VCs	Cost to build Water well (NIS)	Size of well (M3)
Madama	More then 8000	40-80
Awarta	Less then 2000	40-80
Burin	Less then 2000	40-80
Asira al-qiblyha	6000-8000	More then 8
Til	Less then 2000	40-80
Urif	Less then 2000	40-80
Sarra	Less then 2000	40-80
Iraq Burin	Less then 2000	40-80
Einabus	Less then 2000	40-80
Beit Furik	6000-8000	40-80
Beit Dajan	6000-8000	40-80
Rujeib	More then 8000	More then 8

- The above analysis is also applicable for building cesspits. In the absence of a sanitation network, residents resort to building cesspits, which cost on average 2000 NIS/M3, in addition to dislodging the septic materials four times a year for the most of this cluster of villages.

Table 27: Cluster VCs Cost for Building Cesspits and Size

VCs	Cost to build a cesspit (NIS)	Size of cesspit (M3)
Madama	2000-4000	5-10
Awarta	Less then 2000	10-20
Burin	Less then 2000	10-20
Asira al-qiblyha	4000-6000	More then 20
Til	Less then 2000	More then 20
Urif	Less then 2000	More then 20
Sarra	Less then 2000	More then 20
Iraq Burin	Less then 2000	More then 20
Einabus	Less then 2000	10-20
Beit Furik	2000-4000	More then 20
Beit Dajan	4000-6000	10-20
Rujeib	6000-8000	More then 20

- As a result, and according to above results, the current situation will place a heavy financial burden on low-income households, who form a majority in these areas. Such pressure will affects negatively the quality of life of the Palestinian people in rural areas.

Table 28: Cluster VCs Cost for Annual Pumping Out Cesspits and Frequency of Pumping Out Cesspits

Area	Average annual costs (NIS)	Average household pump out a cesspit
Madama	200-400	Less then six months
Awarta	600-800	Less then six months
Burin	600-800	Less then three months
Asira al-qiblyha	600-800	Less then three months
Til	600-800	Less then three months
Urif	600-800	Less then three months
Sarra	600-800	Less then three months
Iraq Burin	400-600	Less then six months
Einabus	200-400	Less then three months
Beit Furik	200-400	Less then three months
Beit Dajan	600-800	Less then three months
Rujeib	600-800	Less then three months

Table 29: JSC - Nablus Central
Projected Income Statement

	2004	2005	2006	2007	2008
Water Billing	2,507	2,978	3,286	3,529	3,742
Cost of Bulk Water	(1,302)	(1,547)	(1,706)	(1,833)	(1,943)
Uncollectibles **(2)**	(251)	(298)	(329)	(353)	(374)
Net Water Billing	**955**	**1,134**	**1,251**	**1,344**	**1,425**
Connection fees **(3)**	643	494	323	255	223
Total Net Revenue	**1,598**	**1,628**	**1,574**	**1,599**	**1,647**
Operation & Management Costs **(4)**	(1,387)	(1,429)	(1,472)	(1,516)	(1,561)
Total O&M Costs	**(1,387)**	**(1,429)**	**(1,472)**	**(1,516)**	**(1,561)**
Net Profit	**211**	**199**	**102**	**84**	**86**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).
(2) Estimated at 10% of water billing.
(3) Connection fees at NIS 720/connection.
(4) Assuming an inflation rate of 3% per year.

Table 30: JSC - Nablus Central
Projected Balance Sheet

Assets	2004	2005	2006	2007	2008
Cash and Cash at Banks	1,259	1,912	2,471	3,016	3,567
Accounts Receivable (25% of net water billing)	239	283	313	336	356
Total Current Assets	***1,497***	***2,195***	***2,784***	***3,352***	***3,924***
Total Fixed Assets **(2)**	22,168	22,390	22,614	22,840	23,068
Accumulated Depreciation	(665)	(1,337)	(2,015)	(2,700)	(3,392)
Net Fixed Assets	***21,503***	***21,053***	***20,598***	***20,139***	***19,676***
Total Assets	**23,000**	**23,248**	**23,382**	**23,491**	**23,599**

Liabilities & Capital					
Accounts Payable (20% of cost of bulk water)	260	309	341	367	389
Retained Earnings (Cumulative Net Profit)	211	410	512	596	682
Capital	22,529	22,529	22,529	22,529	22,529
Total Liabilities & Capital	**23,000**	**23,248**	**23,382**	**23,491**	**23,599**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

(2) Assuming a 1% increase in fixed assets in the years 2005 - 2008, to be paid by the JSC.

Table 31:JSC - Nablus Central

Projected Cash-Flow Statement

	2004	**2005**	**2006**	**2007**	**2008**
Net Profit	211	199	102	84	86
Add: Depreciation	665	672	678	685	692
(Increase)/Decrease in Accounts Receivable	(239)	(45)	(29)	(23)	(20)
(Increase)/Decrease in Total Fixed Assets	-	(222)	(224)	(226)	(229)
(Decrease)/Increase in Accounts Payable	260	49	32	25	22
Net Cash from Operations	**898**	**653**	**559**	**545**	**551**
Initial Cash	361	1,259	1,912	2,471	3,016
End Cash Balance	**1,259**	**1,912**	**2,471**	**3,016**	**3,567**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

Annex 2

Detailed Analysis of VC Questionnaires for Nablus Southeast Cluster

Geographical Location Cluster of communities lying to the South East region of the Governorate of Nablus

Communities Included: 10 communities: Aqraba, Yanun, Usarin, Jurish,

Qusra, Qaryut, Talfit, Jalud, Majdel Bani Fadel, and Duma

Population: 19,071 (PCBS figures of 1997).

A. Institutional Assessment

2- Feasibility of the JSC

Basic question: Are the conditions favorable for the village joining the proposed JSC?

Results indicated the following findings:

1. All of the Village Councils members (100%) surveyed expressed their support, in addition to their playing an active role and willingness to participate within a JSC.

Table 1: VCs Support to JSC and the Role they will be playing

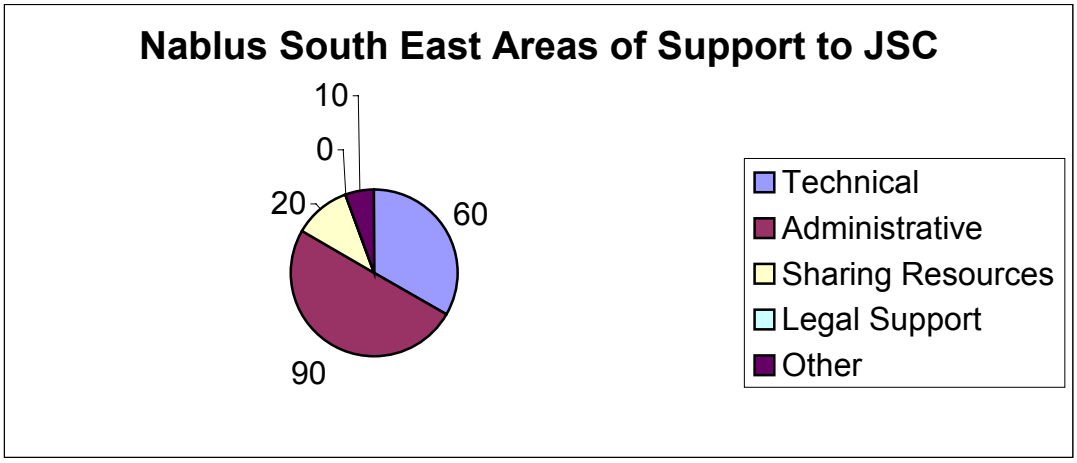
VCs	Support JSC idea	Playing active role
Yanun	Yes	Yes
Aqraba	Yes	Yes
Usarin	Yes	Yes
Jurish	Yes	Yes
Qusra	Yes	Yes
Duma	Yes	Yes
Qaryut	Yes	Yes
Talfit	Yes	Yes
Jalud	Yes	Yes
Majdal Bani Fadel	Yes	Yes

2. All of the Village Councils members (100%) surveyed expressed their willingness to organize in JSC and share resources and experiences in different areas (technical, administrative, resources, and other), especially in the managerial and administrative areas (90%), as the majority of these councils do not have tangible assets, related to the water and sanitation services to be shared. All of the VCs expressed their willingness to cooperate at the intercommunal level, and all do not foresee any obstacles in participating in such JSCs.

Table 2: Areas where VCs Will Contribute Towards JSC

VCs	Technical	Administrative	Sharing Resources	Legal Support	Assets	Others
Yanun	.	Yes	.	.	.	.
Aqraba	Yes	Yes	.	.	.	Yes
Usarin	.	Yes	.	.	.	.
Jurish	Yes	.	.	.	.	.
Qusra	Yes	Yes	Yes	.	.	.
Duma	.	Yes	.	.	.	.
Qaryut	Yes	Yes	Yes	.	.	.
Talfit	.	Yes	.	.	.	.
Jalud	.	Yes	.	.	.	.
Majdel Bani Fadel	.	Yes	.	.	.	.

Graph Related to Table 2: Areas where VCs Will Contribute Towards JSC (Question 2 of VC Questionnaire)



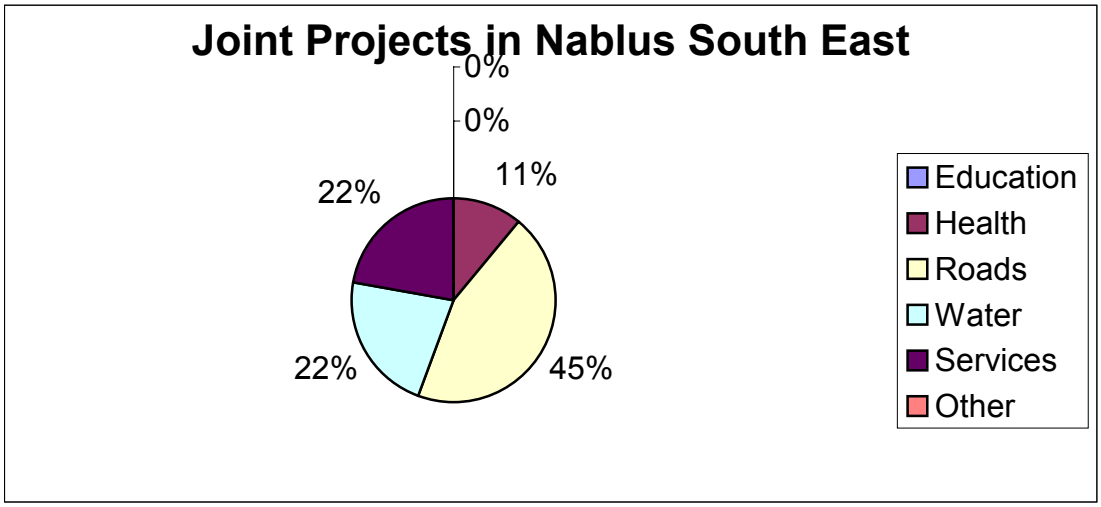
3. 50% of the councils surveyed conducted joint projects with their counterparts in different areas of education, health, roads, water, services, and other. The other 50% did not conduct any joint projects with other VCs. These included Yanun, Qusra, Duma, Talfit and Majdel Bani Fadel.

Table 3: Joint Projects Conducted in Nablus South East Cluster

VC	Conducted any joint projects	Education	Health	Roads	Water	Services	Other
Yanun	No	.	.	.	.	.	.
Aqraba	Yes	.	Yes	Yes	Yes	.	.
Usarin	Yes	.	.	.	.	Yes	.
Jurish	Yes	.	.	Yes	.	Yes	.
Qusra	No	.	.	.	.	.	.
Duma	No	.	.	.	.	.	.

Qaryut	Yes	.	.	Yes	Yes	.	.
Talfit	No	.	.	.	.	.	.
Jalud	Yes	.	.	Yes	.	.	.
Majdel Bani Fadel	No	.	.	.	.	.	.

Graph Related Table 3: Joint Projects Conducted in Nablus South East Cluster



2- Governance of JSC

Basic question: What is the ideal structure and form of the JSC?

This part of the study dealt with the ideal structure and form of JSC. Answers of questions (8-17) reveal the following:

1. Respondents varied in their opinions regarding the representation of MLG or PWA. 70% of the respondents supported MLG representation on the proposed JSC Board of Directors versus 70% for the PWA, and 20% supporting the Ministry of Environment. Majdel Bani Fadel opted for professional associations to be represented on the JSC Board of Directors.

Table 4: Cluster VCs Views in Other Entities Representation on the JSC Board

VCs	PWA	Ministry of environment	Ministry of local government	Professional associations	NGOs	Others
Yanun	Yes	.	Yes	.	.	.
Aqraba	Yes	.	Yes	.	.	.
Usarin	.	.	Yes	.	.	.
Jurish	.	.	.	.	.	Yes
Qusra	Yes	.	Yes	.	.	.
Duma	Yes	.	.	.	.	.
Qaryut	Yes	Yes	Yes	.	.	.

Talfit	.	.	Yes	.	.	.
Jalud	.	Yes	.	.	.	.
Majdel Bani Fadel	Yes	.	Yes	Yes	.	.

2. Regarding the representation status of the above entities in the JSC, (80%) opted for the PWA and MLG representation as an observer, with the exception of Usarin and Qusra who opted for the PWA and MLG as advisors on the JSC Board of Directors.

Table 5: Cluster VCs Views on Roles of Other Entities on JSC Board

VCs	MLG	PWA	Entities National
Yanun	Observer	Advisory	Advisory
Aqraba	Observer	Advisory	Advisory
Usarin	Advisory	Advisory	Advisory
Jurish	Observer	Observer	Observer
Qusra	Advisory	Advisory	Observer
Duma	Observer	Advisory	Advisory
Qaryut	Observer	Advisory	Advisory
Talfit	Observer	Advisory	Other
Jalud	Observer	Advisory	Other
Majdel Bani Fadel	Observer	Advisory	Observer

3. Findings revealed that 50 % of the VCs indicated that the ideal number of the proposed JSC Board of Directors to be 15, while 30% opted for 5, while Qaryut and Majdal Bani Fadel opted for 21 and 5 members, respectively. Such variations in the above opinions need to be addressed.

Table 6: Cluster VCs Views on Workable Number of Members on JSC Board

VCs	*Workable number*
Yanun	15 members
Aqraba	15 members
Usarin	15 members
Jurish	5 members
Qusra	5 members
Duma	5 members
Qaryut	21 members
Talfit	15 members
Jalud	15 members
Majdel Bani Fadel	11 members

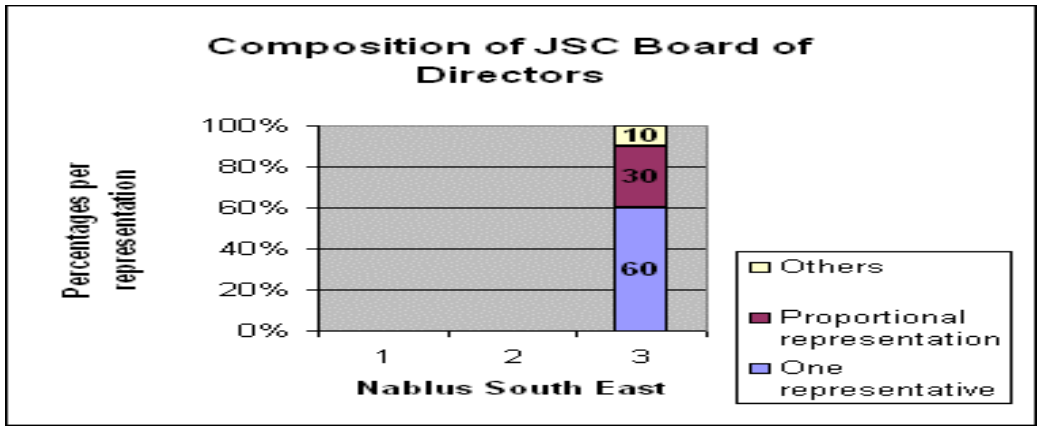
4. Regarding the composition (representative status) of the proposed JSC, 60% opted for one representative

from each VC, 30% for proportional representation, while the remaining 10% opted for another form of representation, such as two members for each VC.

Table 7: Cluster VCs Views on Appropriate Representation/ Composition of VCs to the Entities on JSC Board

VCs	Regarding the composition
Yanun	One representative
Aqraba	Proportional representation
Usarin	One representative
Jurish	Proportional representation
Qusra	Proportional representation
Duma	One representative
Qaryut	Others
Talfit	One representative
Jalud	One representative
Majdel Bani Fadel	One representative

Graph Representing Table 7



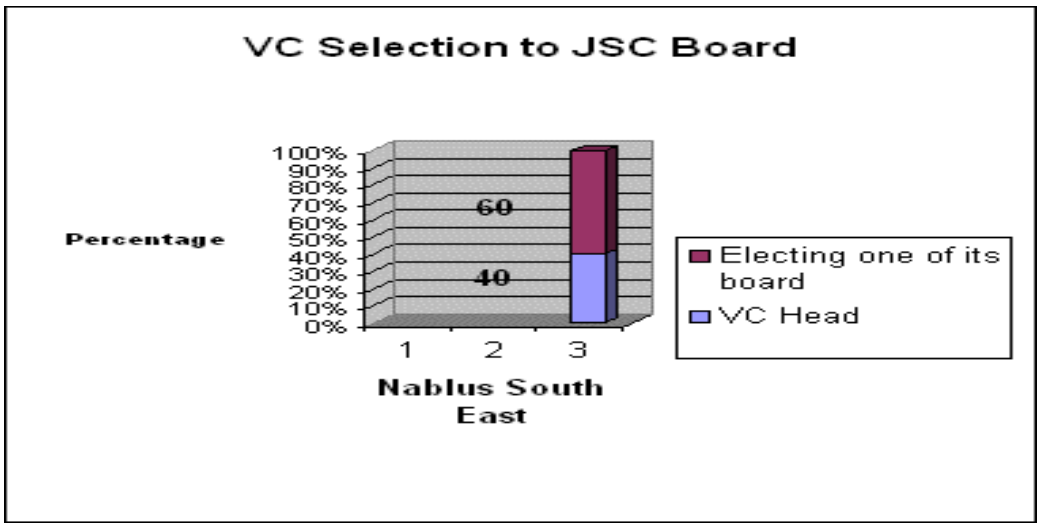
5. In terms of the selection criteria for the VC representative, the majority of the respondents (60%) preferred electing one of the board by the members themselves, while the remaining 40% preferred choosing the VC Head as a representative on the JSC Board of Directors.

Table 8: Cluster VCs Preferred Selection of VC Representation to the JSC Board

VCs	*Preferred Selection Process*
Yanun	President
Aqraba	President
Usarin	Electing one of its board
Jurish	Electing one of its board

Qusra	Electing one of its board
Duma	Electing one of its board
Qaryut	Electing one of its board
Talfit	President
Jalud	President
Majdel Bani Fadel	Electing one of its board

Graph Representing Table 8



6. Results illustrate that all of the respondents (100%) identified their role in the JSC as active, and participating the decision-making process.
7. Results also illustrated that all of the respondents (100%) encouraged the establishment of JSC to deal with water networks services in the current period.

3- Existing Capacity

- *Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?*
- *Basic question: Are there existing management system for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)*

1. Regarding the availability of independent departments that deal with water services, 80% of the VCs surveyed revealed that they did not have any, while the remaining 20% (Aqraba and Qusra) had units.

Table 9: Cluster VCs Having Water Departments

VCs	Have Water department	*Classify*
Yanun	No	.
Aqraba	Yes	Unit
Usarin	No	.
Jurish	No	.

Qusra	Yes	Unit
Duma	No	.
Qaryut	No	.
Talfit	No	.
Jalud	No	.
Majdel Bani Fadel	No	.

2. With the exception of Aqraba, which has a septic tank for dealing with dislodging residents' cesspools, no sanitation units were found in any of the VCs.

Table 10: Cluster VCs Having Sanitation Departments

VCs	Have Sanitation department	Classify
Yanun	No	.
Aqraba	Yes	Unit
Usarin	No	.
Jurish	No	.
Qusra	No	.
Duma	No	.
Qaryut	.	.
Talfit	No	.
Jalud	No	.
Majdel Bani Fadel	No	.

3. In terms of availability of physical resources in the VCs, to be used in the proposed JSC, in general, there were no departments dealing with water and sanitation services, no equipments, or buildings found in the majority of VCs. On the other hand, Aqraba proposed to offer its sanitation-pumping car and water distribution vehicle to be used by the JSC.
4. In terms of availability of natural resources, 40% (Jurish, Qaryut, Yanun, and Talfit) had springs, which may contribute positively towards the establishing of a water network.
5. Lists provided by the VCs regarding the existing situation of the management structure in terms of, names, background, educational status, and experiences revealed the following:

- No effective committees could be found in most VCs boards, since they had small number of members, with no clear division of roles among its members; there were was no form of adequate committees. Questionnaires revealed that members in these VCs were

involved in running the daily operating and administrative affairs as employees; as a result theses members had two roles, one as a representative, and another as an employee such as cashiers or accountants. This was found in Jurish, Talfit, and Jalud, where their members were involved in running daily administrative affairs as employees. Such dual functions weaken the internal control system, since from an internal control point of view, it is important to point out that the major function of the VC member are legislation and monitoring, rather than running the operating functions of VC affairs, which is the responsibility of salaried paid employees.

6. According to the list provided by the respondents regarding functional experiences available in these VCs, there was some kind of diversity in terms of maintenance, accounting, collection, etc. But in general, VC findings revealed the following characteristics:

- Limited managerial capacity. According to the questionnaire, most of these councils do not have adequate staff (first or second level) in major fields especially engineers, and in management, and finance
- No existence of a relevant adequate managerial structure. According to lists attached, most VCs do not have departments, units, or divisions to deal with councils affairs, in addition most of the staff running the councils are concentrated as employees in accounting, maintenance (electricity), and bill collection.
- Lack of functional and managerial experiences in the fields of water and sanitation services, in both technical and financial. This is due to the fact that there are no departments, divisions, and units dealing with such services. An exception was found in Yanun and Aqraba which had Water and Sanitation units, run by a small number of workers with a primary level of education and experience

4. Water Sectorial Issues.

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

1. No additional entities are involved in providing water and sanitation.
2. In terms of availability of ongoing or proposed projects dealing with water and sanitation services, no such projects were found in most villages, with the exception

of one water network project found at Yanun conducted with the Palestinian Hydrology Group. The project was started in 2001, and is expected to start operating in 2002.

Table 11: Cluster VCs Having Water-Related Projects

Cluster	Council	Current or Intended Projects	Start	End
Nablus South East	Yanun	Water Network with Palestinian Hydrology Group	2001	2002

3. Regarding the availability of sanitation services, sanitation networks were not found in the VCs, with the exception of Aqraba, where the VC owns a septic tank. Sanitation services in all other VCs are currently provided by residents through the use of septic tanks, and cesspools, which present serious health and environmental hazards.
4. No adequate water supply sources for the village are found in any VC.
5. In regards to water supply and needs, results indicated that:

- Except for Qaryut, the quantity available in other VCs is not sufficient to meet the various basic needs of the population. While the monthly water consumption reaches 35000 cubic meters, the sufficient monthly amount varies between 44000 - 77000 cubic meters at minimum-maximum levels. These figures indicate that the monthly water deficit ranges between 9000- 42000 M3. In this regard it is important to point out that the above figures are based on VCs' estimation rather than accurate statistics. Consumers buy part of their shortage from neighboring villages such as Huwwara village, and from Nablus municipality. Some, such as the Usarin villages, also purchase water from the Israeli Water Company (Mekorot) through neighboring Israeli Settlements. Other villages, such as Duma, purchase water from distant sources such as the Ein Sami Well in the Ramallah district. In this regards, it is important to point out that such resources put heavy burden on the consumers from a costing point of view as many VCs member pointed out.

Table 12: Cluster VCs Monthly Water Consumption (M3) and Sufficiency

Area	Monthly water consumption	Available Sufficient	Sufficient amount
Yanun	500	No	500-1000
Aqraba	.	No	15000-20000
Usarin	450	No	1000-5000
Jurish	4000	No	5000-10000
Qusra	10000	No	10000-15000
Duma	1600	No	1000-5000
Qaryut	5000	Yes	.
Talfit	10000	No	10000-15000
Jalud	2000	No	1000-5000
Majdel Bani Fadel	500	No	500-1000

Table 13: Cluster VCs Monthly Water Consumption (Questionnaire)

Monthly water consumption	
Valid Responses	9
Missing Responses	1
Mean	3783.333333
Minimum	450
Maximum	10000
Sum	34050

- Except of Yanun where ANERA had conducted a water network project for the village, and already the project has completed its first stage, villages of this cluster lack a piped water supply, since no water networks are available This causes severe water quality problems, and the quality of the water available is poor. Reasons of such poor quality, according to the majority of respondents, attributed them to environmental pollution.
- Respondents pointed out that neither the Ministry of Health nor concerned authorities were conducting any kind of regular tests for assessing water quality.
- No adequate water supply sources for the village are found

5- Public Consultation and Participation

BASIC QUESTION: ARE THEREIN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

1. Except for one experience in Jurish for renovating water wells, no experiences are recorded in these VCs.
2. Except for Aqraba, which conducts dislodging cesspools to the residents through its septic tank, experiences in term of sanitation are not found in any VC
3. Experiences in these VCs are concentrated in fields such roads, education, health, and development and other.
4. Public Consultation experiences in Regional planning committee projects are found in Aqraba and Yanun.
5. Except for Duma and Majdel Bani Fadel, no public awareness experiences were found.
6. Even in the above two VCs, simple experiences were recorded dealing with meetings, workshops, and lectures conducted in areas of education, village needs, and health.

Table 14: Cluster VCs Public Experiences

Council	Experience	Description
Jalud	Roads	Agricultural Road
Jalud	Educational	School Classrooms
Majdal Bani Fadel	Educational	Collection money from residents and building school under municipality supervision
Majdal Bani Fadel	Other	In cooperation with Aqraba, using the municipal waste collection vehicle for 2000 NIS/month
Majdal Bani Fadel	Health	Clinic
Talfit	Roads	Agricultural Road

Qaryut	Educational	Building Schools
Qaryut	Roads	Road constructed between Qaryut and Talfit
Jurish	Educational	Building school of 8 classrooms and 2 floors - community contribution=25%
Aqraba	Roads	Agricultural Road + internal roads
Talfit	Educational	School Classrooms
Aqraba	Educational	Aqraba Primary School and Girls' High School
Jurish	Roads	With community support, constructed three roads
Qusra	Other	Mosque donated land for installing electric power room
Jurish	Wells	Renovating wells, level of contribution=75%

B. Financial Assessment

2- Tariff Policy & Subsidies

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

Note: Except for Qaryut, no water supply services are found in any of the VCs. As a result most of the respondents did not answer this section, since it did not apply to their situation. Therefore, answers in this section, if any, would be opinions rather than accurate facts.

Practically, no tariff policies were found in any of the VCs. Therefore, a comprehensive unified tariff package (prices, collection mechanism, types, brackets, subscription fees, subsidies, Bills format, service connection fees, mechanisms to enforce payments, and currency, and inflation adjustments) should be designed and formed in coordination with these VCs

Table 15: Cluster VCs Monthly Water Tariff and Type of Tariff Setting (Questionnaire)

VCs	**Setting Water Tariff**	***Type of tariff***
Yanun		
Aqraba		
Usarin		
Jurish		
Qusra		
Duma		
Qaryut	You VC	Fixed for all
Talfit		
Jalud	PWA	
Majdel Bani Fadel	.	.

Table 16: Cluster VCs Modifications to Water Price Hikes and Percentage Change (Questionnaire)

VCs	When is Price Modified	Percentage of Price Change
Yanun	.	.
Aqraba	.	.
Usarin	.	.
Jurish	.	.
Qusra	.	.
Duma	.	.
Qaryut	Within two months	Same as the value changed
Talfit	.	.
Jalud	.	.
Majdel Bani Fadel	.	.

Table 17: Cluster VCs Mechanisms to Enforce Bill Payment

Area	Mechanisms to enforce payment
Yanun	
Aqraba	
Usarin	
Jurish	
Qusra	
Duma	
Qaryut	
Talfit	
Jalud	Disconnecting Services
Majdel Bani Fadel	.

Table 18: Cluster VCs Schemes to Support the Poor

VCs	Schemes to Benefit the poor	Types of Schemes
Yanun	.	.
Aqraba	.	.
Usarin	.	.
Jurish	.	.
Qusra	.	.
Duma	.	.
Qaryut	.	.
Talfit	.	.
Jalud	No	.
Majdel Bani Fadel	.	.

3- Local Markets

BASIC QUESTION: WHAT IS THE SIZE OF THE MARKETS FOR WATER AND SANITATION SERVICES IN THE VILLAGE?

1. All of the village's residents depend primarily on collection wells, during the winter seasons, in order to collect and store water. It is important to point out that such sources; especially water tanks present serious health risks.

Table 19: VC Sources of Water

VCs	Collection Wells	Tankers
Yanun	Yes	.
Aqraba	Yes	.
Usarin	Yes	.
Jurish	Yes	.
Qusra	Yes	.
Duma	Yes	.
Qaryut	Yes	.
Talfit	Yes	.
Jalud	Yes	No
Majdel Bani Fadel	Yes	.

2. Since no sanitation network or system were found in any of the VCs, village residents resort to Cesspits. Cesspools are infrequently dislodged through septic tanks and, consequently, wastewater and septage are inadequately treated which presents serious health and environmental hazards.

Table 20: VC Sanitation Sources

VCs	Availability of sanitation network	Any system are used	Existing system
Yanun	No	No	Cesspits
Aqraba	No	No	Cesspits
Usarin	No	No	Cesspits
Jurish	No	No	Cesspits
Qusra	No	No	Cesspits
Duma	No	No	Cesspits
Qaryut	No	No	Cesspits
Talfit	No	No	Cesspits
Jalud	No	No	Cesspits
Majdel Bani Fadel	No	No	Cesspits

3. In terms of costing and the size of building water wells, results indicated the following:

- Cost to build water well amounted to less than 2000 NIS with a size ranging between 40-80 M3 in most villages. From a costing point of view such costs are very expensive for the village, as compared to having a water network, taking into consideration the related operating and maintenance expenses, which reach, on average, 1000 NIS, annually.

Table 21: Cluster VCs Average Cost to Build a Water Well and Size of Well

VCs	Cost to build water well (NIS)	Size of well (M3)
Yanun	Less than 2000	30-40
Aqraba	Less than 2000	40-80
Usarin	Less than 2000	40-80
Jurish	Less than 2000	40-80
Qusra	Less than 2000	40-80
Duma	Less than 2000	40-80
Qaryut	Less than 2000	40-80
Talfit	Less than 2000	20-30
Jalud	Less than 2000	30-40
Majdel Bani Fadel	Less than 2000	40-80

- The above analysis is also applicable for building cesspits. In the absence of having a sanitation network, residents resort to building a cesspit, which costs on average 2000 NIS. In addition to the above, dislodging the septic materials takes place, on average, four times a year for most of the villages.

Table 22: Cluster VCs Average Cost to Build a Cesspit and Size of Cesspit

Area	Cost to build a cesspit (NIS)	Size of cesspit (M3)
Yanun	Less than 2000	10-20
Aqraba	Less than 2000	10-20
Usarin	Less than 2000	More than 20
Jurish	Less than 2000	More than 20
Qusra	Less than 2000	More than 20
Duma	Less than 2000	More than 20
Qaryut	Less than 2000	More than 20
Talfit	Less than 2000	More than 20
Jalud	Less than 2000	10-20

Majdel Bani Fadel	2000-4000	5-10

4. As a result, a conclusion can be drawn that the current situation will place heavy financial burdens on low-income households, who represent a majority in these areas. Such pressures will negatively affect the quality of life of the Palestinian people in rural areas.

Table 23: Cluster VCs Average Annual Cost to Pump Out Cesspit and Frequency of Pumping Out Cesspit

VCs	Average annual cost (NIS)	Average household pump out a cesspit
Yanun	400-600	Less than three months
Aqraba	200-400	Less than three months
Usarin	200-400	More than a year
Jurish	400-600	Less than three months
Qusra	400-600	Less than three months
Duma	400-600	Less than a year
Qaryut	600-800	Less than three months
Talfit	400-600	Less than three months
Jalud	400-600	Less than a year

Table 24: JSC - Nablus Southeast
Projected Income Statement

	2004	2005	2006	2007	2008
Water Billing	2,179	2,588	2,855	3,067	3,251
Cost of Bulk Water	(1,131)	(1,344)	(1,483)	(1,592)	(1,688)
Uncollectibles **(2)**	(218)	(259)	(286)	(307)	(325)
Net Water Billing	**829**	**985**	**1,087**	**1,168**	**1,238**
Connection fees **(3)**	559	429	280	222	193
Total Net Revenue	**1,388**	**1,414**	**1,367**	**1,389**	**1,431**

Operation & Management Costs **(4)**	(1,387)	(1,429)	(1,472)	(1,516)	(1,561)
Total O&M Costs	**(1,387)**	**(1,429)**	**(1,472)**	**(1,516)**	**(1,561)**
Net Profit	**1**	**(14)**	**(104)**	**(126)**	**(130)**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).
(2) Estimated at 10% of water billing.
(3) Connection fees at NIS 720/connection.
(4) Assuming an inflation rate of 3% per year.

Table 25: JSC - Nablus Southeast
Projected Balance Sheet

Assets	**2004**	**2005**	**2006**	**2007**	**2008**
Cash and Cash at Banks	1,046	1,485	1,838	2,173	2,508
Accounts Receivable (25% of net water billing)	207	246	272	292	309
Total Current Assets	***1,254***	***1,732***	***2,110***	***2,465***	***2,818***
Total Fixed Assets **(2)**	22,168	22,390	22,614	22,840	23,068
Accumulated Depreciation	(665)	(1,337)	(2,015)	(2,700)	(3,392)
Net Fixed Assets	***21,503***	***21,053***	***20,598***	***20,139***	***19,676***
Total Assets	**22,757**	**22,785**	**22,708**	**22,604**	**22,493**
					-
Liabilities & Capital					
Accounts Payable (20% of cost of bulk water)	226	269	297	318	338
Retained Earnings (Cumulative Net Profit)	1	(13)	(117)	(243)	(373)
Capital	22,529	22,529	22,529	22,529	22,529
Total Liabilities & Capital	**22,757**	**22,785**	**22,708**	**22,604**	**22,493**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).
(2) Assuming a 1% increase in fixed assets in the years 2005 - 2008, to be paid by the JSC.

Table 26: JSC - Nablus Southeast
Projected Cash-Flow Statement

	2004	**2005**	**2006**	**2007**	**2008**
Net Profit	1	(14)	(104)	(126)	(130)
Add: Depreciation	665	672	678	685	692
(Increase)/Decrease in Accounts Receivable	(207)	(39)	(25)	(20)	(18)
(Increase)/Decrease in Total Fixed Assets	-	(222)	(224)	(226)	(228)
(Decrease)/Increase in Accounts Payable	226	42	28	22	19

Net Cash from Operations	**685**	**439**	**353**	**335**	**335**
Initial Cash	361	1,046	1,485	1,838	2,173
End Cash Balance	**1,046**	**1,485**	**1,838**	**2,173**	**2,508**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

Annex 3

Detailed Analysis of VC Questionnaires for Hebron Northwest Cluster

Geographical Location Cluster of communities lying to the north-western region of the Governorate of Hebron

Communities Included: 8 communities: Beit Ummar, Surif, Al-Jaba'a, Beit Ula, Nuba, Kharas, Safa and Jala

Population: 35,096 (PCBS figures of 1997).

A. Institutional Assessment

1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the village joining the proposed JSC?

1. VC representatives supported the idea of establishing a JSC, and 100% answered that their VC would play an active and positive role. 83.3% were in support; while the Surif representative added that it was not important (16.7%). The Surif VC expressed their view during the plenary session that was held on November 21st, 2001, since it had considered that the JSC might do away with some of the jurisdictions of the local VCs.

Table 1: VCs Support to JSC and the role they will be playing.

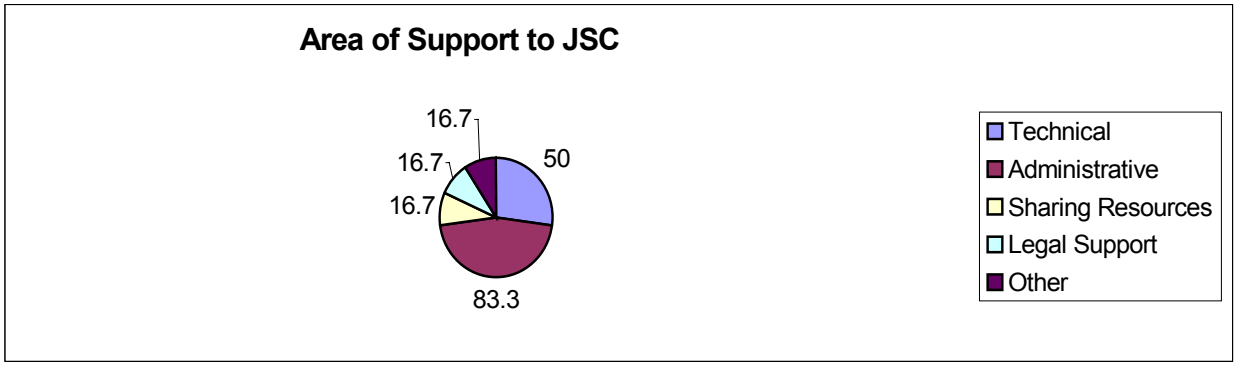
Area	support idea	Playing active role
Beit Ummar	Yes	Yes
Beit Ula	Yes	Yes
Nuba	Yes	Yes
Jala	Yes	Yes
Al-Jaba'a	Yes	Yes
Surif	Yes	Yes
Kharas	Yes	Yes

2. In terms of what role the VC would be playing, the distribution was as follows, keeping in mind that more than one area of support was offered by the VCs to the JSC:
   - Administrative: 83.3%
   - Technical: 50%
   - Assets: 16.7%
   - Legal Support: 16.7%

Table 2: Areas where VCs will contribute towards JSC.

Cluster	Technical	Administrative	Sharing Resources	Legal Support	Assets	Others
Beit Ummar	.	Yes	.	.	.	Yes
Beit Ula	Yes	Yes	.	.	.	.
Nuba	Yes	.	.	.	.	.
Jala	.	Yes	.	.	.	.
Al-Jaba'a		Yes				
Surif	Yes	Yes	Yes	Yes	.	.
Kharas	.	Yes	.	.	.	.

Graph Related to Table 2: Areas of VC Support to JSC (Question 2 of VC questionnaire)



66.6% responded that they enjoyed a good relationship within the cluster communities, while 33.4% rated it as excellent.

Table 3: Rating of Level of Cooperation According to VCs.

Cluster	Level of cooperation
Beit Ummar	**Excellent**
Beit Ula	**Good**
Nuba	**Excellent**
Jala	**Good**
Al-Jaba'a	**Good**
Surif	**Good**
Kharas	**Good**

3. Moreover, there were 5 joint project geared towards benefiting the smaller included communities, especially Jala. The joint project are divided as follows:
   - Roads: 2 projects (40%)
   - Education: 1 project (20%)
   - Health: 1 project (20%)
   - Services: 1 project (20%)

Table 4: Joint Projects in Cluster VCs

Cluster	Conducted any joint projects	Education	Health	Roads	Water	Services	Other
Beit Ummar	No	.	.	.	.	.	.
Beit Ula	No	.	.	.	.	.	.
Nuba	Yes	Yes	Yes	Yes	.	Yes	.
Jala	Yes	.	.	Yes	.	.	.
Al-Jaba'a	Yes						
Surif	No	.	.	.	.	.	.
Kharas	No	.	.	.	.	.	.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

1. All VC representatives expressed their willingness and support for the establishment of a JSC, and offered to become active and participating players in decision-making. 83.3% responded that they would like to see the PWA

represented on the JSC Board of Directors, with the same percentages for the MLG and MoE, as compared to 50% for professional associations and 33% for non-governmental organizations (NGOs).

Table 5: Cluster VCs Views in Other Entities Representation on JSC Board

VCs	PWA	Ministry of Environment	Ministry of Local government	Professional associations	NGOs	Others
Beit Ummar	.	.	.	Yes	Yes	.
Beit Ula	Yes	Yes	Yes	Yes	.	.
Nuba	Yes	Yes	Yes	Yes	.	Yes
Jala	Yes	Yes	Yes	.	Yes	.
Al-Jaba'a			Yes	Yes		
Surif	Yes	Yes	Yes	.	.	Yes
Kharas	Yes	Yes	Yes	.	.	.

2. In terms of the role that these agencies will play on the JSC, they were distributed as follows:
   - MLG: 83.3% as observer versus 16.6% for advisory.
   - PWA: 50% for observer versus 33% for advisory.
   - National Entities: 50% for observers versus 50% for advisory.

Table 6: Cluster VCs Views on Roles of Other Entities on JSC Board

VCs	MLG	PWA	Entities National
Beit Ummar	Advisory	Advisory	Advisory
Beit Ula	Observer	Observer	Advisory
Nuba	Observer	Other	Advisory
Jala	Observer	Observer	Observer
AL-Jaba'a	Observer	Advisory	Advisory
Surif	Observer	Advisory	Observer
Kharas	Observer	Observer	Observer

3. When asked about the ideal number of JSC board members, 33.3% opted for 11 members, 16.6% for 15 members, and 16.6% for 21 members.

Table 7: Cluster VCs Views on Workable Number of Members on JSC Board

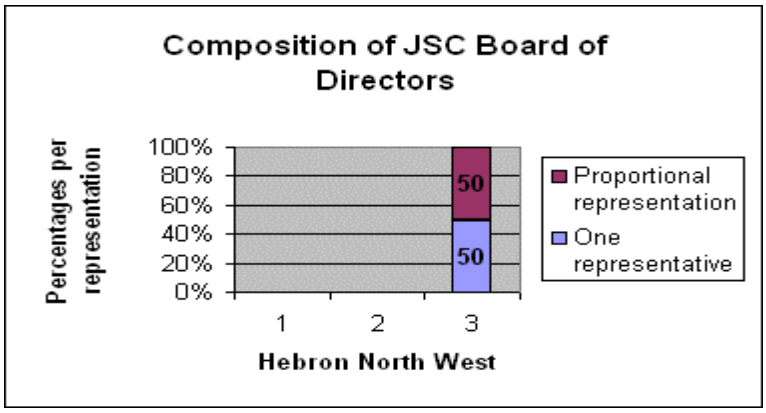
VCs	Workable number
Beit Ummar	11 members
Beit Ula	11 members
Nuba	5 members
Jala	15 members
Al-Jaba'a	15 members
Surif	21 members
Kharas	5 members

4. As for the appropriate representation on the board, 50% were for proportional representation, versus 50% for each VC being represented by one person on the board. Furthermore, 33.5% opted for the head of each VC representing the VC to be representing his/her respective VC on the board, while 50% were for the VC electing its own representative on the board. These percentages reflect the low level of social and political homogeneity inside the VC, where there exist several tribal and political trends, and each seeks to come out stronger and share powers.

Table 8: Cluster VCs Views on Appropriate Representation/ Composition of VCs to the JSC Board

VCs	Regarding the composition
Beit Ummar	Proportional representation
Beit Ula	Proportional representation
Nuba	One representative
Jala	One representative
Al-Jaba'a	Proportional representation
Surif	Proportional representation
Kharas	One representative

Graph Representing Table 8

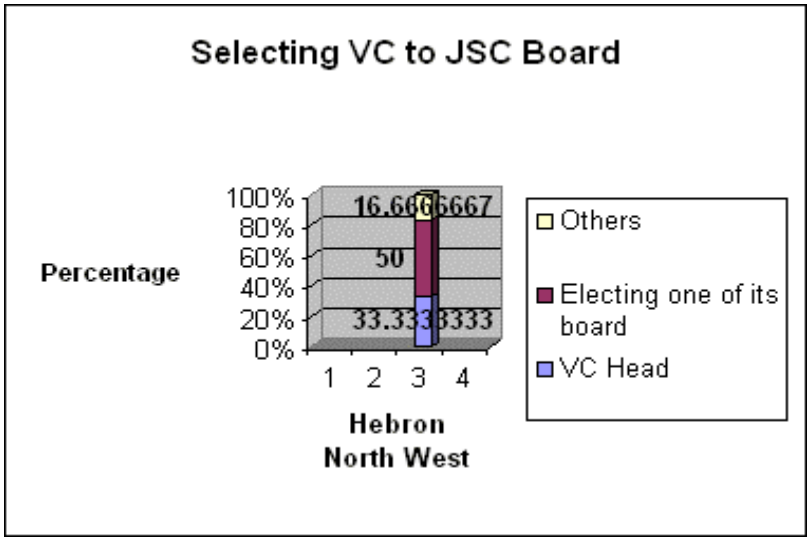


5. 83.3% were for one vote/member on the JSC board, versus 16.7% for other.

Table 9: Cluster VCs Preferred Selection of VC Representation to the JSC Board

VCs	Preferred Selection Process
Beit Ummar	Others
Beit Ula	electing one of its board
Nuba	President
Jala	electing one of its board
Al-Jaba'a	electing one of its board
Surif	President
Kharas	electing one of its board

Graph Representing Table 9



6. The suggested board can take the following format:
   - Board members: 7 one for each VC.
   - Board members represented by the heads of each VC.
   - Voting weight for each member is proportional to the number of population of the VC represented, or on a certain equivalent percentage basis.
   - The election of the president of the JSC board can take the same voting format as the above.
7. The JSC board of directors ought to have PWA, MLG and MoE representation, with no voting powers. They would also enjoy monitoring power to guarantee the commitment and implementation of the JSC By-Laws, in addition to playing an advisory role for assisting in raising the effectiveness of such JSCs.

3. Existing Capacity & Systems in Place:

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?

Basic question: Are there existing management system for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

1. Four out of the six VCs have modest independent units for water management, and personnel. In comparison to the Hebron South West Cluster, this is due to the

fact that they are found in larger communities, and these VCs tend to be larger in size, or are classified as municipalities.

Table 10: Cluster VCs Having Water Departments

VCs	Have Water department	Classify
Beit Ummar	Yes	Division
Beit Ula	Yes	.
Nuba	No	.
Jala	No	.
Al-Jaba'a	No	
Surif	Yes	Division
Kharas	Yes	Unit

2. None of the VCs have independent sanitation units, since the sanitation network in this cluster is non-existent.

Table 11: Cluster VCs Having Sanitation Departments

VCs	Have Sanitation department	Classify
Beit Ummar	No	
Beit Ula	No	
Nuba	No	
Jala	No	
Al-Jaba'a	No	
Surif	No	
Kharas	No	

3. In terms of personnel and experience working in these VCs, most of them were young in age, and well experienced. This cluster enjoys having qualified technicians and engineers. However, in the areas of meter reading, field pipe extensions, and maintenance, the cluster does not have the necessary water units and departments to conduct work professionally.
4. Of those working personnel, 16.7% had a BA-level, 25% diploma-level (associate degrees), 41.7% were high school graduates and 16.6% did not graduate from high school.

Table 12: Cluster VCs Professional Background

Council	Experience in Years	Academic	Position

Beit Ummar	6	BA	Eng. Dept. Head
Beit Ummar	15	High School	Maintenance
Beit Ula	10	Preparatory	Water Dept. Employee
Nuba	5	High School	Not Free
Nuba	10	High School	Cashier
Nuba	5	High School	Guard
Nuba	3	Diploma	Accountant's Secretary
Surif	13	BA	Municipal Engineer
Surif	15	Elementary	Plumber
Surif	2	Diploma	Technician
Kharas	15	High School	

5. Upon reviewing the database of office equipments, operating systems, equipment and maintenance, it was clear that there are weaknesses in the systems, mainly as a result of general losses in water projects. Maintenance is almost non-existent in most VCs where there are water networks. Moreover, managerial operations pertaining to water tend to be included under other managerial operations, in general. Office equipment is lacking in number, traditional, old or medium aged. Space used for water management is small, and involves mainly warehouses for equipment and supplies.
6. In summary, the available managerial structure for water management in this cluster is reliable and may be able to function as a nucleus for a JSC. However, it is suggested that a new and independent managerial systems be established for the JSC, where acceptance and cooperation levels may be enhanced, as compared with existing and unreliable systems. Low effectiveness, bureaucracies and slow processes characterize existing structures of the local VCs.

5. Water Sectorial issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

1. The cluster enjoys a water network that serves the majority of the local communities. However, from reviewing the database, meetings with VCs and on-site observation, there are two main obstacles that this cluster faces:
   - The non-continuous supply of water. The amounts are insufficient and come in small quantities; a situation which is exasperated during the summer seasons.
   - The existing water network is old and this contributes to more water losses. Moreover, the building expansion in the region outgrows the capacity of the existing water network. Residents complain of the low level of water services, whether it is related to maintenance done to the network or the slow expansion in extending the water network to the community. As a result, water collection wells are found in households.
2. Water-related projects in the region are non-strategic and traditional in nature such as the expansion of the Kharas water network, renovating water pipelines in Surif, and water pipe extension in Beit Ula. Yet, these do not meet the water needs of the local communities, and neither deals with the issue of water losses.

Table 13: Cluster VCs Water-Related Projects

Council	Project
Kharas	Water: New Water system with 13" diameter - for 6 kilometers
Surif	Renovating water system with diameter of 3 and 4 for 2 kilometers
Beit Ula	Municipal water project for 7 kilometers towards the western part

3. The local water sources come mainly from collection wells; some water springs and whatever may be purchased or collected from the water network.
4. The average monthly consumption was placed at 20250 cubic meters, which none of the VCs considered sufficient in terms of quantity for household consumption.

Table 14: Cluster VCs Monthly Water Consumption and Sufficiency

VCs	Monthly water consumption (M3)	Available Sufficient (M3)	Sufficient amount (M3)
Beit Ummar	39000	No	More than 20000
Beit Ula	.	No	15000-20000
Nuba	12000	Yes	.
A-Jaba'a		No	1000-5000
Jala	.	.	.
Surif	20000	No	More than 20000
Kharas	10000	No	10000-15000

Table 15: Cluster VCs Monthly Water Consumption

Monthly water consumption (M3)		
	Valid Responses	5
	Missing Responses	2
Mean		20250
Minimum		10000
Maximum		39000
Sum		81000

5. 66.6% of respondents considered the quality of available water to be acceptable, versus 33.4% who responded that it was not. Causes for poor quality were attributed to environmental pollution and the need for maintaining pipes.
6. In terms of checking for water quality, 50% responded that there were checks for water quality performed by the PWA and GEKA, while 50% said that there were no regular checks conducted.
7. In terms of sanitation networks, they are non-existent.

6. Public consultation and participation

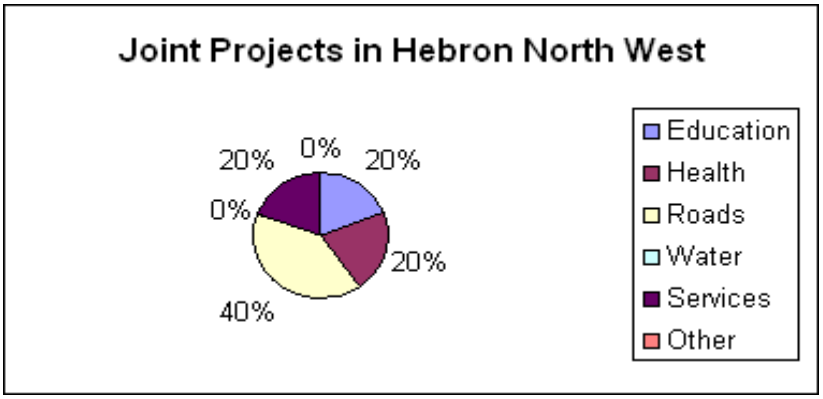
BASIC QUESTION: ARE THEREIN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

1. Upon reviewing the recent joint projects conducted in the cluster, there were 8 joint projects divided as follows: education (2 -25%), roads (3-37.5%), wells (1-12.5%), health (1-12.5%), and in development (1-12.5%). Most of the joint projects in development and consultation targeted the Jala area, a small community in need of almost all basic services.

Table 16: Cluster VCs Experiences in Public Consultation

Council	Experience
Kharas	Educational
Beit Ula	Educational
Kharas	Health
Beit Ula	Wells
Jala Projects	Roads
Kharas	Developmental
Kharas	Roads
Beit Ula	Roads

Graph to Table 16: Cluster VCs Experiences in Public Consultation



2. All rated these experiences as positive. The low number of projects, as compared to the South Hebron Cluster, stems from the fact that these tend to be larger communities where there are municipalities, which receive aid and basic services to offer to their citizens.

B. Financial Assessment

1. Tariff Policy & Tariff Subsidies

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

1. 83.3% of respondents said that their VCs are responsible to determining the tariffs. The one VC (Jala) that did not respond lacked water services.
2. In terms of tariff policies, 2 VCs (Nuba and Surif - 28.6%) had a sliding tariff policy, while 3 VCs (Beit Ummar, Beit Ula and Kharas -42.8%) had a fixed tariff for each amount of consumption.

Table 17: Cluster VCs Setting of Water and Type of Tariffs

VCs	Setting Water Tariff	Type of tariff
Beit Ummar	VC	Fixed for all
Beit Ula	VC	Fixed for all
Nuba	VC	Siding tariff
Jala	.	Has no water network.
AL-Jaba'a	VC	Siding tariff
Surif	VC	Siding tariff
Kharas	VC	Fixed for all

3. In the communities that follow a sliding tariff policy, both VCs placed the minimum charge at less than 5 cubic meters for a fee less than 20 New Israeli Shekels (NIS), as the only bracket. The price of a bracket ranged between 4-5 NIS, where the VCs bought water at a price less than 3 NIS/M3 in all cases.

Table 18: Cluster VCs Type of Tariffs and Required Minimum Quantity (Point 3 above)

Area	Type of tariff	Minimum Quantity	Fixed subscription	Tariff brackets
Beit Ummar	Fixed for all	.	.	.
Beit Ula	Fixed for all	.	.	.
Nuba	Siding tariff	Less then 5	Less then 20	.
Jala	.	.	.	.
Al-Jaba'a	Siding tariff	More then 10	30-40	20-40
Surif	Siding tariff	Less then 5	Less then 20	Less then 5
Kharas	Fixed for all	.	.	.

4. It was also noted that the modifications to the price of cubic meter charge to consumers were not tied to the cost of living in 66.6% of the VCs, while 33.4% did not answer this part.

Table 19: Cluster VCs Having Mechanisms to Adjust to Cost of Living

VCs	Mechanisms to Adjust to Cost of Living

Beit Ummar	.
Beit Ula	No
Nuba	No
Jala	.
Al-Jaba'a	Yes
Surif	No
Kharas	No

5. In the event the supplier raising the price of water, 40% of VCs mentioned that modification to the bill would take place in the following two months, 40% of the VCs said there would be no change, and 20% did not respond to this question.
6. 66.6% of VCs changed and modified the water bill at a higher percentage of the increase imposed by the water suppliers.

Table 20: Cluster VCs Modification to Water Price Hikes and Percentages of Adjustments (Points 5 & 6 Above)

VCs	Modification if Price raised by Water Supplier	Percentage of Increase
Beit Ummar	No modification	.
Beit Ula	Others	Other
Nuba	Within two months	Higher then the value changed
Jala	.	.
Al-Jaba'a	In the following invoice	Same as the value changed
Surif	No modification	.
Kharas	Within two months	Higher then the value changed

7. In situation where consumers have not paid the bills, 60% of VCs resort to payments in installments, 20% to cutting off water supply, and 20% to other means, which include cutting off electric supply.

Table 21: Cluster VCs Mechanisms for Dealing with Delinquent Payments

VCs	Mechanisms
Beit Ummar	Payment in installments
Beit Ula	Payment in installments
Nuba	Payment in installments
Jala	.
Al-Jaba'a	Payment in installments
Surif	Other

Kharas	Disconnecting Services

8. 40% of these VCs have special schemes to support the poor through water supply subsidies, while 60% mentioned that they had no such schemes. In 50% of cases, they are exempt from payments, while in 50% of cases, payments are done through installments.

Table 22: Cluster VCs Mechanisms for Supporting the Poor

VCs	Special Schemes	Type of Schemes
Beit Ummar	No	
Beit Ula	No	
Nuba	Yes	Discounts
Jala	.	
AL-Jaba'a	No	
Surif	No	
Kharas	Yes	Exemption

9. The average cost for connection fees is 604 NIS, with a minimum charge of 440 NIS and a maximum charge of 880 NIS. Moreover, it was found that in 33.3% of cases, the connection fee covered just the connection, while 16.7% covered connection + water connection + insurance. 33.3% of VCs did not answer this question.

Table 23: Cluster VCs Water Connection Fees

VCs	Average Connection Fees (NIS)
Beit Ummar	880
Beit Ula	500
Nuba	700
Jala	Has no water network.
AL-Jaba'a	303
Surif	440
Kharas	500

Table 24: Cluster VCs Criteria for Setting Water Connection Fees

VCs	Criteria for Setting Water Fees
Beit Ummar	.
Beit Ula	Subscription Costs
Nuba	Subscription Costs + Pipes
Jala	.

Surif	Others
Kharas	Subscription Costs

10. 66.7% of VCs answered that the collected fees did not cover their operating costs, as compared to 33.3% of VCs who answered that it did cover their operating costs.
11. Upon answering the question of what the collected fees covered, (Q51), 33.3% of VCs quoted depreciation as the main recipient of those fees, versus 33.3% for operational costs. Upon exploring this question further with the VCs, it was obvious that their calculations for costing, revenues and money matters handling are not done scientifically. There is a lack of professional accountants in water departments and the JSC can draw upon the existing human resources in the cluster.
12. 40% of VCs collected payments directly, and 60% through the local municipalities.
13. The currency used in payments is the New Israeli Shekels (NIS).
14. 50% of VCs preferred to have separate bills for water and sanitation, and 50% expressed that they would prefer one bill, which includes water and sanitation in anticipation to the future availability of sanitation services.

3. Local Markets

BASIC QUESTION: WHAT IS THE SIZE OF THE MARKETS FOR WATER AND SANITATION SERVICES IN THE VILLAGE?

1. ACCORDING TO THE STATISTIC COLLECTED FROM THE VCS, THE TOTAL NUMBER OF INHABITANTS IN THIS CLUSTER WAS PLACED AT 45,785 PEOPLE.

Table 25: Cluster VCs Number of Population according to Questionnaire

Mean		6647.85
Minimum		285
Maximum		12000
Sum		46535

2. THE AVERAGE MONTHLY WATER CONSUMPTION IS 21200 CUBIC METERS DURING THE SUMMER, AND 15400 CUBIC METERS DURING THE WINTER, WHICH PLACES THE AVERAGE PER CAPITA DAILY CONSUMPTION AT 14 LITERS IN SUMMER AND 10.17 LITERS IN WINTER. THIS IS A VERY LOW PERCENTAGE IN TERMS OF MEETING THEIR DAILY NEEDS, AND ACCOUNTS FOR HALF OF THE REQUIRED QUANTITY.

Table 26: Cluster VCs Summer/ Winter Monthly Water Consumption (M3) to Questionnaire

Valid Responses	6	
Missing Responses	1	
	Average Summer Consumption	Average Winter Consumption
Mean	18033	13016
Minimum	12000	8000
Maximum	41000	36000
Sum	108200	78100

3. IN REGARDS TO THE VC RECORDS FOR WATER COLLECTION, 66.6% OF VCS SAID THAT THEY HAD A POSITIVE AND ACCEPTABLE RECORD, WHILE 33.4% SAID THAT THEY HAD A POOR AND UNACCEPTABLE RECORD. FOR 40% OF RESPONDENTS 70-90% OF WATER BILLS WERE COLLECTED, 20% PLACED THAT PERCENTAGE AT A 50-70% COLLECTION RECORD, AND 40% SAID THAT LESS THAN 50% OF BILLS WERE COLLECTED.

4. THE AVERAGE FEE CHARGED FROM CONSUMERS PER CUBIC METER WAS 4.2 NIS, WITH ONE VC CHARGING 5 NIS.

5. THE MAJOR COMMUNITY SECTORS THAT BENEFITED FROM THE WATER SUPPLIES WERE THE HOUSEHOLDS, AS COMPARED TO INDUSTRY AND PROJECTS WHERE THEY GOT LITTLE IN TERMS OF PERCENTAGE AND QUANTITIES.

Table 27: Cluster VCs Sectorial Monthly Water Consumption (M3) According to Questionnaire

Area	Sector	Connect to water meters	Consumption	non metered	Consumption
Beit Ummar	Commercial	42	420	.	.
Beit Ula	Organization	10	500	.	.
Nuba	Households	120	3000	.	.
Jala	Commercial	10	300	.	.
Surif	Organization	3	200	.	.
Kharas	Households	239	1930	57	570

6. IN THE DIFFERENT COMMUNITIES, WATER SUPPLY SOURCES MAY COMBINE ONE OR MORE RESOURCES: 50% GOT THEIR WATER FROM WATER TANKERS, 66.6% FROM COLLECTION WELLS, AND 16.6% FROM WATER RESERVOIRS.

Table 28: Cluster VCs Sources of Water According to Questionnaire

	Collection Wells	Tankers
Beit Ummar	Yes	Yes

Beit Ula	Yes	.
Nuba	Yes	.
Jala	Yes	.
Surif	.	.
Kharas	Yes	.

7. BUILDING A WATER COLLECTION WELL OF 40-80 CUBIC METERS, COSTS ON AVERAGE BETWEEN 6500-7000 NIS.

Table 28: Cluster VCs Average Cost and Size for Building Water Wells

VCs	Average cost for Building a water well in NIS	Average size of Water Well
Beit Ummar	6000-8000	40-80
Beit Ula	Less then 2000	40-80
Nuba	More then 8000	40-80
Jala	6000-8000	30-40
Al-Jaba'a	More then 8000	40-80
Surif	6000-8000	30-40
Kharas	More then 8000	More then 8

8. THE ANNUAL OPERATIONAL COSTS FOR MANAGING A WATER RESERVOIR OR WELL IS BETWEEN 400-600 NIS, WHILE THE ANNUAL MAINTENANCE COSTS RUNS AROUND 200-400 NIS FOR MAINTAINING THE NETWORK.

Table 29: Cluster VCs Average Annual and Maintenance Water Reservoir Costs (NIS)

VCs	Average annual Management Costs	Average annual Maintenance Costs
Beit Ummar	.	
Beit Ula	400-600	200-400
Nuba	400-600	200-400
Jala	.	600-800
Surif	Less than 400	Less than 200
Kharas	.	

9. IN TERMS OF A SANITATION NETWORK, IT IS NON-EXISTENT IN ANY OF THE VCS. SANITATION IS PERFORMED THROUGH CESSPITS AVAILABLE IN EACH HOUSEHOLD. AN AVERAGE 15 CUBIC METER CESSPIT COSTS 5000 NIS TO BUILD.

Table 30: Cluster VCs Average Cost and Size for Building Cesspits

VCs	Cost to build a cesspit in NIS	Average Size of cesspit
Beit Ummar	6000-8000	More than 20
Beit Ula	Less than 2000	More than 20

Nuba	6000-8000	10-20
Jala	4000-6000	More than 20
Surif	4000-6000	10-20
Kharas	2000-4000	More than 20

10. THE AVERAGE ANNUAL COST FOR PUMPING OUT CESSPITS IS 650 NIS, WHICH IS DONE LESS THAN EVERY SIX MONTHS.

Table 31: Cluster VCs Average Annual Cost for Pumping Out Cesspits, and the Frequency of Pumping Out Cesspits

VCs	Average Annual Cost for Pumping Out Cesspits in NIS	Frequency of Pumping Out Cesspits
Beit Ummar	600-800	Less then six months
Beit Ula	200-400	More then a year
Nuba	600-800	Less then three months
Jala	400-600	Less then a year
Al-Jaba'a	200-400	More then a year
Surif	400-600	Less then a year
Kharas	600-800	.

Table 32: JSC - Hebron Northwest

Projected Income Statement

	2004	**2005**	**2006**	**2007**	**2008**
Water Billing	4,588	5,067	5,447	5,780	6,058
Cost of Bulk Water	(2,383)	(2,631)	(2,829)	(3,001)	(3,146)
Uncollectibles **(2)**	(459)	(507)	(545)	(578)	(606)
Net Water Billing	**1,747**	**1,929**	**2,074**	**2,201**	**2,306**
Connection fees **(3)**	764	502	399	349	292
Total Net Revenue	**2,511**	**2,431**	**2,473**	**2,549**	**2,598**
Operation & Management Costs **(4)**	(1,400)	(1,442)	(1,485)	(1,529)	(1,575)
Total O&M Costs	**(1,400)**	**(1,442)**	**(1,485)**	**(1,529)**	**(1,575)**
Net Profit	**1,112**	**989**	**988**	**1,020**	**1,023**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

(2) Estimated at 10% of water billing.

(3) Connection fees at NIS 720/connection.

(4) Assuming an inflation rate of 3% per year.

Table 33: JSC - Hebron Northwest
Projected Balance Sheet

Assets	**2004**	**2005**	**2006**	**2007**	**2008**
Cash and Cash at Banks	2,135	3,512	4,890	6,304	7,725
Accounts Receivable (25% of net water billing)	437	482	518	550	577
Total Current Assets	***2,572***	***3,994***	***5,409***	***6,854***	***8,301***
Total Fixed Assets **(2)**	18,884	19,073	19,264	19,456	19,651
Accumulated Depreciation	(567)	(1,139)	(1,717)	(2,300)	(2,890)
Net Fixed Assets	***18,317***	***17,934***	***17,547***	***17,156***	***16,761***
Total Assets	**20,889**	**21,928**	**22,956**	**24,010**	**25,062**
					-
Liabilities & Capital					
Accounts Payable (20% of cost of bulk water)	477	526	566	600	629
Retained Earnings (Cumulative Net Profit)	1,112	2,101	3,089	4,109	5,132
Capital	19,301	19,301	19,301	19,301	19,301
Total Liabilities & Capital	**20,889**	**21,928**	**22,956**	**24,010**	**25,062**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

(2) Assuming a 1% increase in fixed assets in the years 2005 - 2008, to be paid by the JSC.

Table 34: JSC - Hebron Northwest
Projected Cash-Flow Statement

	2004	**2005**	**2006**	**2007**	**2008**

Net Profit	1,112	989	988	1,020	1,023
Add: Depreciation	567	572	578	584	590
(Increase)/Decrease in Accounts Receivable	(437)	(46)	(36)	(32)	(26)
(Increase)/Decrease in Total Fixed Assets	-	(188)	(191)	(193	(195)
(Decrease)/Increase in Accounts Payable	477	50	39	35	29
Net Cash from Operations	**1,718**	**1,377**	**1,378**	**1,414**	**1,421**
Initial Cash	417	2,135	3,512	4,890	6,304
End Cash Balance	**2,135**	**3,512**	**4,890**	**6,304**	**7,725**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

Annex 4
Detailed Analysis of VC Questionnaires for Hebron Southwest Cluster

Geographical Location Cluster of communities lying in the south-western region of the Governorate of Hebron

Communities Included: 17 communities: Beir Muslem, Ithna, Beit Maqdum, Al-Kum, Al-Mawreq, Deir Samit, Beit Awwa, Sikka, Al-Majd, Deir al 'Asal atahta, Deir al'Asal al Fouqa, Beit ar-Rush al-Tahta, Beit Mirsim, Al-Burj, Tarqumiya, Es Simiya, and Khirbit Beit Salema.

Population: 43,185 (PCBS figures of 1997)

A. Institutional Assessment

1. Feasibility of the JSC:

Basic question: Are the conditions favorable for the village joining the proposed JSC?

1. All VC representatives supported the idea of establishing a JSC, 94.1% answered that their VC would play an active and positive role (82.4% responded to Q2, 11.6% did not respond to this part) 5.9% did not respond to Q1 and Q2, although their support came out of the plenary sessions.

Table 1: VCs Support to JSC and the Role they will be playing

VCs	support idea	Playing active role
Beit ar-Rush al-Fouqa	Yes	No
Beit Mirsim	Yes	Yes

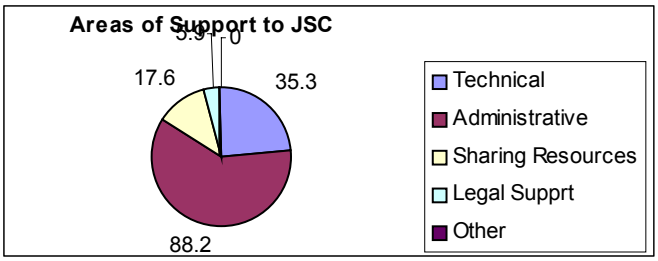
Khirbit Beit Salema	Yes	Yes
Deir al'Asal atahta	Yes	No
Sikka Watwas	Yes	Yes
Deir al'Asal al Fouqa	Yes	Yes
Al-Majd	Yes	Yes
Ithna	Yes	Yes
Tarqumiya	Yes	Yes
Beer Muslem	Yes	No
Al-Mawreq	Yes	Yes
Al-Kum	Yes	Yes
Beit Maqdum	Yes	Yes
Deir Samit	Yes	Yes
ES Simiya	Yes	Yes
Beit Awwa	Yes	Yes
Al-Burj	Yes	Yes

2. In terms of what role the VC would be playing, the distribution was as follows:
   - Administrative: 88.2%
   - Technical: 35.3%
   - Assets: 17.6%
   - Legal Support: 5.9%
   - Funding: 5.9%

Table 2: Areas where VCs will Contribute towards JSC

Area	Technical	Administrative	Sharing Resources	Legal Support	Assets	Others
Beit ar-Rush al-Fouqa	Yes	Yes	Yes	.	.	.
Beit Mirsim	Yes	Yes	.	.	.	.
Khirbit Beit Salema	.	Yes	.	.	.	.
Deir al'Asal atahta	.	Yes	.	.	.	.
Sikka Watwas	.	.	Yes	.	.	.
Deir al'Asal al Fouqa	.	Yes	.	.	.	.
Al-Majd	Yes	Yes	.	.	.	.
Ithna	Yes	Yes	.	.	.	.
Tarqumiya	Yes	Yes	.	.	.	.
Beer Muslem	.	.	.	.	.	.
Al-Mawreq	.	Yes	.	.	.	.
Al-Kum	.	Yes	.	.	.	.
Beit Maqdum	.	Yes	.	.	.	.
Deir Samit	.	Yes	.	.	.	.
ES Simiya	.	Yes	.	.	.	.
Beit Awwa	Yes	Yes	Yes	Yes	Yes	.
Al-Burj	.	Yes	.	.	.	.

Graph Related to Table 2: Areas where VCs Support to JSC (Question 2 of VC Questionnaire)



3. 76.5% responded that they enjoyed a good relationship within the cluster communities, while 23.5% rated it as excellent.

Table 3: Rating of Level of Cooperation According to VCs

VCs	Level of cooperation
Beit ar-Rush al-Fouqa	Good
Beit Mirsim	Good
Khirbit Beit Salema	Good
Deir al'Asal atahta	Good
Sikka Watwas	Excellent
Deir al'Asal al Fouqa	Good
Al-Majd	Good
Ithna	Good
Tarqumiya	Good
Beer Muslem	Good
Al-Mawreq	Excellent
Al-Kum	Excellent
Beit Maqdum	Excellent
Deir Samit	Good
ES Simiya	Good
Beit Awwa	Good
Al-Burj	Good

4. In terms of obstacles towards the establishment of JSC, 88.2% saw no obstacles, while 11.8% saw the obstacles arising mainly from their deficits and water debts, which they are still working on solving through legal and tribal processes.
5. Moreover, and due to the small number of the communities in this cluster, joint project are existent in 14 out of the 17 communities (82.3%), where neighboring communities had joint project divided as follows:
   - Roads: 78.5%
   - Education: 42.8%
   - Health: 28.5%
   - Water: 21.4%
   - Services: 21.4%
   - Other: 28.5% (including sanitation, maintenance and regional planning). It is worth noting that there exists more than one joint project for the same VC)

Table 4: Joint Projects in Cluster VCs

VCs	Conducted any joint projects	Education	Health	Roads	Water	Services	Other
Beit ar-Rush al-Fouqa	No	Yes	.	.	.	.	.

Beit Mirsim	Yes	.	Yes	Yes	Yes	.	.
Khirbit Beit Salema	Yes	Yes	.	Yes	.	.	.
Deir al'Asal atahta	Yes	.	.	Yes	Yes	.	.
Sikka Watwas	Yes	.	.	Yes	.	.	.
Deir al'Asal al Fouqa	Yes	Yes	Yes	Yes	Yes	Yes	.
Al-Majd	Yes	Yes	.	Yes	.	.	.
Ithna	No	.	.	.	.	.	.
Tarqumiya	Yes	.	Yes	Yes	.	.	.
Beer Muslem	.	.	Yes	.	.	.	.
Al-Mawreq	Yes	Yes	.	Yes	.	.	Yes
Al-Kum	Yes	.	.	Yes	.	.	.
Beit Maqdum	Yes	.	.	Yes	.	.	Yes
Deir Samit	Yes	.	.	.	.	Yes	Yes
ES Simiya	Yes	.	.	.	.	Yes	Yes
Beit Awwa	No	.	.	.	.	.	.
Al-Burj	Yes	Yes	.	Yes	.	.	.

6. Finally, all factors for the establishment of a JSC in this cluster are found, and the majority of the VC representatives are calling for establishing a JSC with enough jurisdictions to allow it to function effectively.

2. Governance of JSC:

Basic question: What is the ideal structure and form of the JSC?

1. 82.4% responded that they would like to see the PWA represented on the JSC Board of Directors, with the same percentage for the MLG, as compared to 64.7% for the MoE, and 58.8% for professional associations. The higher percentage for the MLG and PWA is reflected due to the successful level of cooperation that exists between these two PNA agencies and the VCs in this cluster.

Table 5: Cluster VCs Views in Other Entities Representation on JSC Board

	PWA	Ministry of Envirnm.	Ministry of Local Government	Professional Associations	NGO	Others
Beit ar-Rush al-Fouqa	Yes	.	.	.	.	.
Beit Mirsim	.	.	Yes	.	.	.
Khirbit Beit Salema	.	.	.	Yes	.	.
Deir al'Asal atahta	Yes	.	Yes	Yes	.	.
Sikka Watwas	.	.	.	Yes	.	.
Deir al'Asal al Fouqa	Yes	Yes	Yes	.	.	.
Al-Majd	Yes	Yes	Yes	Yes	.	.
Ithna	Yes	Yes	Yes	.	.	.
Tarqumiya	Yes	Yes	Yes	Yes	.	.
Beer Muslem	Yes	Yes	Yes	Yes	.	.
Al-Mawreq	Yes	Yes	Yes	Yes	.	.
Al-Kum	Yes	Yes	Yes	Yes	.	.

Beit Maqdum	Yes	Yes	Yes	Yes	.	Yes
Deir Samit	Yes	Yes	Yes	Yes	.	Yes
ES Simiya	Yes	.	Yes	.	.	.
Beit Awwa	Yes	Yes	Yes	.	.	.
Al-Burj	Yes	Yes	Yes	.	.	.

2. In terms of the role that these agencies will play on the JSC, they were distributed as follows:
   - MLG: 52.9% as observer versus 47% for advisory.
   - PWA: 64% for observer versus 35.2% for advisory.
   - National Entities: 41.2% for observers versus 58.8% for advisory.

Table 6: Cluster VCs Views on Roles of Other Entities on JSC Board

VCs	MLG	PWA	Entities National
Beit ar-Rush al-Fouqa	Observer	Observer	Advisory
Beit Mirsim	Advisory	Observer	Advisory
Khirbit Beit Salema	Advisory	Observer	Observer
Deir al'Asal atahta	Advisory	Advisory	Advisory
Sikka Watwas	Observer	Observer	Observer
Deir al'Asal al Fouqa	Observer	Observer	Observer
Al-Majd	Advisory	Advisory	Observer
Ithna	Advisory	Advisory	Advisory
Tarqumiya	Advisory	Advisory	Observer
Beer Muslem	Observer	Observer	Advisory
Al-Mawreq	Observer	Observer	Advisory
Al-Kum	Observer	Observer	Advisory
Beit Maqdum	Observer	Observer	Observer
Deir Samit	Observer	Observer	Observer
ES Simiya	Observer	Observer	Advisory
Beit Awwa	Advisory	Advisory	Advisory
Al-Burj	Advisory	Advisory	Advisory

3. When asked about the ideal number of JSC board members, 41.2% opted for 11 members, 23.5% for 5 members, 23.5% for 21 members, and 11.7% for 15 members.

Table 7: Cluster VCs Views on Workable Number of Members on JSC Board

VCs	Workable number
Al-Majd	11 members
Ithna	5 members
Tarqumiya	11 members
Beer Muslem	21 members
Al-Mawreq	21 members
Al-Kum	21 members
Beit Maqdum	5 members
Deir Samit	5 members
ES Simiya	5 members

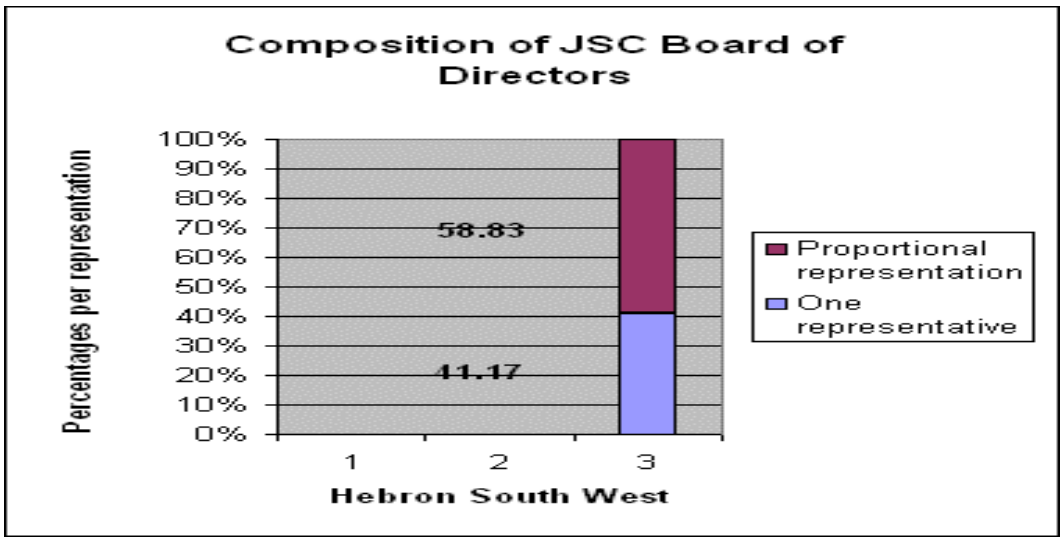
Beit Awwa	11 members
Al-Burj	11 members

4. As for the appropriate representation on the board, 58.8% were for proportional representation, versus 41.2% for each VC being represented by one person on the board. Furthermore, 82.4% chose for the head of each VC representing the VC on the board, while 16.7% were for the VC electing its own representative on the board.

Table 8: Cluster VCs Views on Appropriate Representation/ Composition of VCs to the JSC Board

VCs	Regarding the composition
Beit ar-Rush al-Fouqa	Proportional representation
Beit Mirsim	One representative
Khirbit Beit Salema	One representative
Deir al'Asal atahta	Proportional representation
Sikka Watwas	Proportional representation
Deir al'Asal al Fouqa	Proportional representation
Al-Majd	Proportional representation
Ithna	Proportional representation
Tarqumiya	Proportional representation
Beer Muslem	One representative
Al-Mawreq	One representative
Al-Kum	One representative
Beit Maqdum	Proportional representation
Deir Samit	Proportional representation
ES Simiya	Proportional representation
Beit Awwa	One representative
Al-Burj	One representative

Graph Representing Table 8

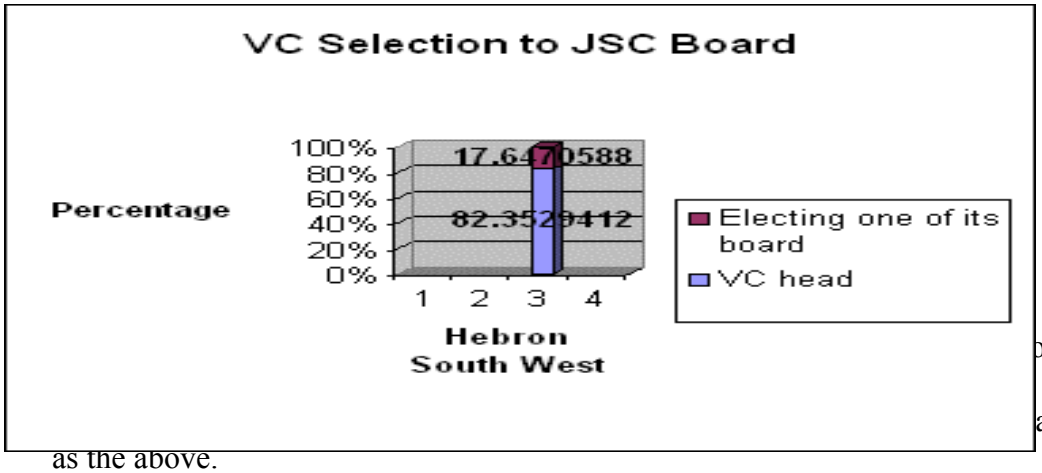


5. 64.7% were for one vote/member on the JSC board, versus 35.3% was for one vote per VC.

Table 9: Cluster VCs Preferred Selection of VC Representation to the JSC Board

VCs	Preferred Selection Process
Beit ar-Rush al-Fouqa	President
Beit Mirsim	electing one of its board
Khirbit Beit Salema	electing one of its board
Deir al'Asal atahta	President
Sikka Watwas	President
Deir al'Asal al Fouqa	electing one of its board
Al-Majd	President
Ithna	President
Tarqumiya	President
Beer Muslem	President
Al-Mawreq	President
Al-Kum	President
Beit Maqdum	President
Deir Samit	President
ES Simiya	President
Beit Awwa	President
Al-Burj	President

Graph Representing Table 9

6. 

of

at as the above.

7. The JSC board of directors ought to have PWA, MLG and MoE representation, with voting powers to guarantee the commitment and implementation of the JSC

By-Laws, in addition to playing an advisory role for assisting in raising the effectiveness of such JSCs.

3. Existing Capacity & Systems in Place:

Basic question: what human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?

Basic question: Are there existing management system for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchases)

1. Five out of the 17 VCs have independent units for water management. These are found in VCs classified as municipalities. These is due to two factors:
   - Small communities with a small population.
   - Management is done using traditional systems of management, where the head of the VC works centrally, and manages everything.

Table 10: Cluster VCs Having Water Departments

VCs	Have Water department	Classify
Beit ar-Rush al-Fouqa	No	.
Beit Mirsim	No	.
Khirbit Beit Salema	No	.
Deir al'Asal atahta	No	.
Sikka Watwas	No	.
Deir al'Asal al Fouqa	No	.
Al-Majd	Yes	Unit
Ithna	Yes	Department
Tarqumiya	No	.
Beer Muslem	No	.
Al-Mawreq	No	.
Al-Kum	No	.
Beit Maqdum	Yes	Division
Deir Samit	Yes	Division
ES Simiya	Yes	Division
Beit Awwa	No	.
Al-Burj	No	.

2. None of the VCs have independent sanitation units, since the sanitation network in this cluster is non-existent.

Table 11: Cluster VCs Having Sanitation Departments

VCs	Have Sanitation departments

Beit ar-Rush al-Fouqa	No
Beit Mirsim	No
Khirbit Beit Salema	No
Deir al'Asal atahta	No
Sikka Watwas	No
Deir al'Asal al Fouqa	No
Al-Majd	No
Ithna	No
Tarqumiya	No
Beer Muslem	No
Al-Mawreq	No
Al-Kum	No
Beit Maqdum	No
Deir Samit	No
ES Simiya	No
Beit Awwa	No
Al-Burj	No

3. In terms of personnel and experience working in these VCs, most of them were young in age, and had less than two years of experience and the number was not sufficient.
4. Of those working personnel, 30% had a BA-level, 30% diploma-level (associate degrees), 30% were high school graduates and 10% did not graduate from high school.

Table 12: Cluster VCs Professional Background

Council	Experience	Academic
Tarqumiya	11	BA
Tarqumiya	4	Diploma
Mawreq, Karam and Beit Maqdum	2	BA
Mawreq, Karam and Beit Maqdum	5	Diploma
Beit Maqdum	5	Diploma
Beit Maqdum	2	BA
Deir Samit - Sima	2	High School
Deir Samit - Sima	2	BA
Deir Samit - Sima	8	BA
Beit Awwa	5	Preparatory
Beit Awwa	6	High School

5. A quick look at these percentages suggests that the traditional paternal tribal managerial system is slowly vanishing, since the representation on the board of each VC is no longer based on tribal allegiance, but also includes political representations. Furthermore, this suggests that proper managerial training is needed to assist the local expertise in managing major public activities in an effective manner, despite the several training conducted by the MLG in the area of management. With the existing humble managerial skills, and an increasing

number of personnel with academic qualifications, there is an increased chance in the successful establishment and implementation of a functioning and active JSC.

6. Upon reviewing the database of office equipments, operating systems, equipment and maintenance, it was clear that there were weaknesses in the systems, mainly as a result of general losses in water projects. Maintenance is almost non-existent in most VCs where there are water networks. Moreover, managerial operations pertaining to water and included under other managerial operations, in general. Office equipment is lacking in number, traditional, old or medium aged. Space used for water management is small, and involves mainly equipment warehouses and supplies.
7. In summary, the available managerial structure for water management in this cluster is unreliable and cannot function as a nucleus for a JSC. However, the existing infrastructure and technical expertise may be put to good use. It is suggested that a new and independent managerial system be established for the JSC, where acceptance and cooperation levels may be enhanced, as compared with existing and unreliable systems.

5. Water Sectorial issues

Basic question: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?

1. The VCs that have water networks suffer from weak services that do not reach many communities. As a result, many residents get their water supplies from water tankers wherever they are found. This ends up being costly to the residents, and sometime leads to confrontation with the local municipality, which is able to supply water at reduced prices to the consumers. This confrontation is more apparent during the summer seasons.
2. Water-related projects in the region are non-strategic in nature and take a primary curative nature. They involve building water reservoirs for each community, where the local springs are exploited for water collection. The situation becomes worse during the summer seasons, where water is lacking in quantity and high in demand. Water wells are prevalent, where it is traditional that each household has a water well for collecting rainwater for storage and purchasing water from water tankers, in anticipation of a non-continuous water supply during the summer seasons.

Table 13: Cluster VCs Water-Related Projects

Council	Project	Start	End
Deir Samit-Sima	Sanitation	2001	2001
Deir Dajet	Pilot Station for servicing 35 households	2001	2001
Tarqumiya	Building 1000 CC reservoir	2002	2002
Tarqumiya	Rehabilitating all water network		
Ithna	Rehabilitating 2 Kilometer water network with GEKA	2001	2002
Ithna	Maintaining and expanding 7 kilometer water network with Save the Children	2001	2002

3. The average monthly consumption was placed at 5150 cubic meters, which none of the VCs considered sufficient in terms of quantity for household consumption, not to mention needed water for agriculture and industry. The additional average needed monthly water for consumption was placed at 6000 cubic meters.

Table 14: Cluster VCs Monthly Water Consumption (M3) and Sufficiency

VCs	Monthly water consumption	Available Sufficient	Sufficient amount
Beit ar-Rush al-Fouqa	1500	No	1000-5000
Beit Mirsim	600	Yes	500-1000
Khirbit Beit Salema	150	No	1000-5000
Deir al'Asal atahta	800	No	1000-5000
Sikka Watwas	2000	.	.
Deir al'Asal al Fouqa	3000	No	1000-5000
Al-Majd	20000	No	15000-20000
Ithna	25000	No	More than 20000
Tarqumiya	400	No	500-1000
Beer Muslem	.	.	.
Al-Mawreq	2800	No	1000-5000
Al-Kum	.	.	.
Beit Maqdum	10000	No	10000-15000
Deir Samit	3000	No	1000-5000
ES Simiya	5000	No	5000-10000
Beit Awwa	2500	No	1000-5000
Al-Burj	500	No	500-1000

Table 15: Cluster VCs Monthly Water Consumption

Monthly Water Consumption (M3)		
	Valid Responses	15
	Missing Responses	2
Mean		5150
Minimum		150
Maximum		25000
Sum		77250

4. 47% of respondents considered the quality of available water to be acceptable, versus 53% who responded that it was not. Of those 11% attributed it to chemical pollution, 77% to environmental pollution, 33% to salty water, 22% to lack of oxygen dissolved in water, 22% to global impurities, and 11% to water tankers that do not contain water fit for human consumption. (More than one reason was quoted in the answers of each VC).
5. In terms of checking for water quality, 8 out of the 17 responded that there were checks for water quality (47%), performed by the PWA and GEKA. The Ministry of Health conducted only one check.

6. In terms of sanitation networks, they were non-existent, and the cesspits system is used in each household.

6. Public consultation and participation

BASIC QUESTION: ARE THEREIN THE VILLAGE EXPERIENCES ON CONSULTATION AND PARTICIPATORY APPROACHES THAT CAN BE APPLIED TO PROJECT IMPLEMENTATION AND TO THE OPERATION OF THE JOINT SERVICE COUNCILS (JSCS)?

1. Upon reviewing the joint projects, conducted in the cluster for the past five years, there were 13 joint projects in education (76.4%), 12 in roads (70%), and 7 projects in wells (23%) and 7 in development (23%). 97% rated these experiences as positive.

Table 16: Cluster VCs Experience in Public Consultation

Council	Experience	Description
Sikka + Watwas	Educational	Building School with 3 new classrooms
Beit Awwa	Roads	
Sikka + Watwas	Roads	Facilitating Transportation
Beit El Rush El Fouqa	Educational	
Beit Marsam	Roads	
Deir El Asal El Tahta	Roads	
Deir El Asal El Fouqa	Educational	
Mawreq, El Kum & Beit Maqdum	Developmental	
Mawreq, El Kum & Beit Maqdum	Educational	
Tarqumiya	Developmental	
Beit Maqdum	Developmental	
Sikka + Watwas	Other	Electric generators
Al Burj	Developmental	Establishing Women's Club for area
Deir El Asal El Tahta	Other	Maintenance to electric network
Deir El Asal El Fouqa	Roads	
Majd	Developmental	
Deir El Asal El Fouqa	Developmental	
Majd	Roads	
Beit Maqdum	Roads	
Beit El Rush El Fouqa	Roads	
Mawreq, El Kum & Beit Maqdum	Roads	
Beit Awwa	Wells	
Tarqumiya	Wells	
Majd	Wells	
Tarqumiya	Roads	
Mawreq, El Kum & Beit Maqdum	Developmental	
Ithna	Health	
Tarqumiya	Health	
Sikka + Watwas	Wells	Increasing Water Reserves for village
Beit Awwa	Educational	
Beit Awwa	Health	
Deir El Asal El Fouqa	Wells	
Deir El Asal El Fouqa	Health	
Ithna	Roads	

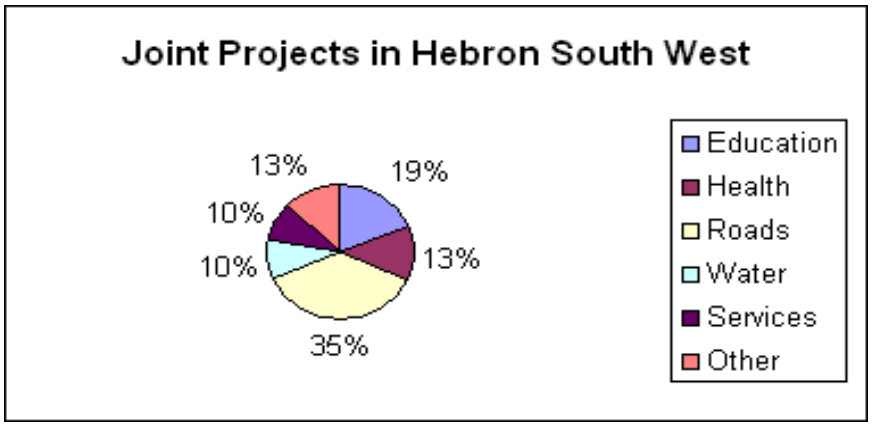
Majd	Educational	
Tarqumiya	Educational	
Deir Samit-Sima	Educational	
Mawreq, El Kum & Beit Maqdum	Roads	
Beit Maqdum	Educational	
Ithna	Educational	
Beit Marsam	Wells	
Deir Sajet	Educational	
Mawreq, El Kum & Beit Maqdum	Educational	
Al Burj	Educational	Opening Up high school classrooms
Beit El Rush El Fouqa	Wells	

2. Two small communities usually performed these joint projects, or one small community was part of the project. This reflects the great need for such projects in the smaller communities, where there is a great need for basic services, and conducting such joint project was one of the means for supplying these services.
3. Incentives for such projects were made possible through interventions from Save the Children Federation, UNDP, Ministry of Local Government, the Regional Planning Committee and others.

Table 17: Cluster VCs Experience in Joint Projects

Council	Experience in Joint Projects
Mawreq, El Kum & Beit Maqdum	Joint Services Council for Solid Waster Collection with Doura Municipality
El Burj	Establishing Joint Services Council for Burj-Sikka from the MLG
El Burj	Establishing Planning Committee for Western Doura with UNDP Projects
Mawreq, El Kum & Beit Maqdum	Save the Children Federation
Mawreq, El Kum & Beit Maqdum	Joint Services Council for Solid Waster Collection with Doura Municipality
Ithna	
Tarqumiya	
Deir Sajet	
Beit Awwa	
Mawreq, El Kum & Beit Maqdum	Regional Planning Committee
Beit Maqdum	Save the Children Federation
Beit Maqdum	Joint Services Council for Solid Waster Collection with Doura Municipality
Mawreq, El Kum & Beit Maqdum	Save the Children Federation
Mawreq, El Kum & Beit Maqdum	Planning Committee for Western Doura
Deir Samit - Sima	Agricultural Awareness
Deir Samit - Sima	Health Awareness - Use of Water
Beer Muslim	
Majd	
Deir El Asal El Fouqa	
Sikka Watwas	
Deir El Asal El Tahta	
Beit Marsam	
Beit El Rush El Fouqa	
Khirbit Bani Slim	
Beit Maqdum	Regional Planning Committee

Graph Related to Table 17: Cluster VCs Experience in Joint Projects



4. Finally in terms of joint pubic awareness, there were 3 in agricultural industry, two in women education, and one in the proper methods for water use. In general, they were positive experiences supported by the local communities.

B. Financial Assessment

1. Tariff Policy & Tariff Subsidies

BASIC QUESTION: ARE THE CURRENT TARIFF AND SUBSIDY POLICIES CONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND OF THE LONG-TERM FINANCIAL VIABILITY OF THE JSCS?

1. 88.2% of respondents said that their VCs were responsible for setting tariffs, independently and with no interference from the PWA. In regards to water tankers, water suppliers set their own tariffs.
2. In terms of tariff policies, 46% had a sliding tariff policy, 40% had a fixed tariff for each amount of consumption, while 13.3% had a fixed tariff for every 3 cubic meters of water. This analysis reflects the absence of a unified policy to deal with tariffs, due to the different living conditions of each community, lack of water network supply and the communities being distant from water sources.

Table 18: Cluster VCs Setting of Water and Types of Tariff

Area	Setting Water Tariff	Type of tariff
Beit ar-Rush al-Fouqa	VC	.
Beit Mirsim	Other	.
Khirbit Beit Salema	VC	Fixed for all

Deir al'Asal atahta	VC	Siding tariff
Sikka Watwas	VC	Fixed for all
Deir al'Asal al Fouqa	VC	Fixed Price per M3
Al-Majd	VC	Fixed Price per M3
Ithna	VC	Siding tariff
Tarqumiya	VC	Siding tariff
Beer Muslem	Other	Siding tariff
Al-Mawreq	VC	Fixed for all
Al-Kum	VC	Fixed for all
Beit Maqdum	VC	Fixed for all
Deir Samit	VC	Siding tariff
ES Simiya	VC	Siding tariff
Beit Awwa	VC	Siding tariff
Al-Burj	VC	Fixed for all

3. In the communities that followed a sliding tariff policy, 50% set the minimum charge at less than 5 cubic meters for a fee less than 20 New Israeli Shekels (NIS). The tariff brackets were as follows:
   - Less than 5 cubic meters: 33%
   - 5-10 cubic meters: 16.6%
   - 10-20 cubic meters: 33%
   - More than 20 cubic meters: 16.6%

Table 19: Cluster VCs Types of Tariffs and Required Minimum Quantity (Point 3 above)

VCs	Type of tariff	Minimum Quantity(NIS)	Fixed subscription (NIS)	Tariff brackets (NIS)
Beit ar-Rush al-Fouqa	.	.		.
Beit Mirsim	.	.	.	.
Khirbit Beit Salema	Fixed for all	.	.	.
Deir al'Asal atahta	Siding tariff	5-10	20-30	10-20
Sikka Watwas	Fixed for all	.	.	.
Deir al'Asal al Fouqa	Fixed Price per M3	.	.	.
Al-Majd	Fixed Price per M3	.	.	.
Ithna	Siding tariff	More then 10	Less then 20	20-40
Tarqumiya	Siding tariff	More then 10	30-40	More then 40
Beer Muslem	Siding tariff	.	Less then 20	10-20
Al-Mawreq	Fixed for all	.	.	.
Al-Kum	Fixed for all	.	.	.
Beit Maqdum	Fixed for all	.	.	.
Deir Samit	Siding tariff	Less then 5	20-30	Less then 5
ES Simiya	Siding tariff	Less then 5	.	Less then 5
Beit Awwa	Siding tariff	Less then 5	Less then 20	5-10
Al-Burj	Fixed for all	.	.	.

4. In terms of the price for each bracket per meter cubic, it was as follows:
   - Less than 4 NIS/M3: 5.9% of the VCs.
   - 4-5 NIS/M3: 58.8% of the VCs.
   - 5-6 NIS/M3: 5.9% of the VCs.
5. The cost price for purchasing water was less than 3 NIS/M3 for 50% of the VCs and 64.2% of them sell the cubic meter to consumers for 4-5 NIS/M3.
6. Despite the difference between the prices paid by VCs and those charged to consumers, there is still a lack in water supply which raises the need to account for missing water supply and to check whether it was a result of technical complications, poor network, existing debts, water theft, etc.
7. It was also noted that modifications to the price of cubic meter charge to consumers was not tied to the cost of living in 64.7% of the VCs, as compared to 23.5% VCs, while 11.8% did not answer this part.

Table 20: Cluster VCs Having Mechanisms to Adjust to Cost of Living

VCs	Mechanism to Adjust to Cost of Living
Beit ar-Rush al-Fouqa	No
Beit Mirsim	.
Khirbit Beit Salema	No
Deir al'Asal atahta	No
Sikka Watwas	No
Deir al'Asal al Fouqa	.
Al-Majd	No
Ithna	No
Tarqumiya	Yes
Beer Muslem	No
Al-Mawreq	No
Al-Kum	No
Beit Maqdum	No
Deir Samit	Yes
ES Simiya	Yes
Beit Awwa	Yes
Al-Burj	No

8. In the event the price of water raised by suppliers, 46.7% of VCs mentioned that the modification in the bill would take place in the following bill, as compared to two months in 26.7% of the VCs, and

immediately in 13.3% of the VCs. 13.3% did not respond to this question.

9. 92.9% of VCs changed and modified the water bill in the same percentage of the increase imposed by water suppliers.

Table 21: Cluster VCs Modifications to Water Prices Hikes and Percentages of Adjustments (Points 8 & 9 above)

VCs	Modification if Price raised by Water Suppliers	Percentage of Increase
Beit ar-Rush al-Fouqa	Within two months	.
Beit Mirsim	.	.
Khirbit Beit Salema	Immediately	Same as the value changed
Deir al'Asal atahta	In the following invoice	Same as the value changed
Sikka Watwas	In the following invoice	Same as the value changed
Deir al'Asal al Fouqa	.	.
Al-Majd	Within two months	Same as the value changed
Ithna	In the following invoice	Same as the value changed
Tarqumiya	In the following invoice	Same as the value changed
Beer Muslem	Within two months	Same as the value changed
Al-Mawreq	In the following invoice	Same as the value changed
Al-Kum	In the following invoice	Same as the value changed
Beit Maqdum	In the following invoice	Same as the value changed
Deir Samit	Others	Other
ES Simiya	Others	Same as the value changed
Beit Awwa	Immediately	Same as the value changed
Al-Burj	Within two months	Same as the value changed

10. In situation where the bills have not been paid by consumers, 40% of VCs resorted to payments in installments, 13.3% to cutting off water supply, 33.3% to cutting of electric supply, and 13.3% took legal action, and 6.6% resorted to the tribal laws for resolving payment.

Table 22: Cluster VCs Mechanisms for Dealing with Delinquent Payments

VCs	Mechanisms
Beit ar-Rush al-Fouqa	Fines
Beit Mirsim	.
Khirbit Beit Salema	Payment in installments
Deir al'Asal atahta	Other
Sikka Watwas	Payment in installments
Deir al'Asal al Fouqa	.
Al-Majd	Other
Ithna	Other
Tarqumiya	Disconnecting Services
Beer Muslem	Disconnecting Services
Al-Mawreq	Other
Al-Kum	Other
Beit Maqdum	Other
Deir Samit	Payment in installments
ES Simiya	Disconnecting Services
Beit Awwa	Fines
Al-Burj	Payment in installments

11. The main reason for being behind in paying water bills deals with poverty levels, especially in the smaller communities, and the best resort is payments in installments. 56.3% of these VCs have special schemes to support the poor through water supply. In 60% of cases, they are exempt from payment, while 40% of cases were done through installments. In the larger communities, 43.8% did not have schemes to support the poor.

Table 23: Cluster VCs Mechanisms for Supporting the Poor

VCs	Special Schemes	Types of Schemes
Beit ar-Rush al-Fouqa	Yes	Exemption
Beit Mirsim		
Khirbit Beit Salema	No	
Deir al'Asal atahta	No	
Sikka Watwas	No	
Deir al'Asal al Fouqa	Yes	Exemption

Al-Majd	Yes	Exemption
Ithna	Yes	Installments
Tarqumiya	No	Installments
Beer Muslem	Yes	Installments
Al-Mawreq	Yes	Exemption
Al-Kum	Yes	Exemption
Beit Maqdum	Yes	Exemption
Deir Samit	No	.
ES Simiya	No	.
Beit Awwa	Yes	Installments
Al-Burj	No	.

12. The average cost for connection fees is 584.6 NIS, with a minimum charge of 50 NIS and a maximum charge of 1300 NIS. This major gap results from the fact that water is found in minimal quantities and due to the poverty level of the communities. Moreover, it was found that in 76.5% of cases, the connection fee covered just the connection, while 11.8% covered connection + water connection + insurance. 11.8% of VCs did not answer this question.

Table 24: Cluster VCs Water Connection Fees

VCs	Average Connection Fees (NIS)
Beit ar-Rush al-Fouqa	Has no water network.
Beit Mirsim	Has no water network
Khirbit Beit Salema	Has no water network
Deir al'Asal atahta	1300
Sikka Watwas	800
Deir al'Asal al Fouqa	Has no water network.
Al-Majd	50
Ithna	700
Tarqumiya	400
Beer Muslem	600
Al-Mawreq	300
Al-Kum	300
Beit Maqdum	300
Deir Samit	850
ES Simiya	850
Beit Awwa	850
Al-Burj	300

Table 25: Cluster VCs Criteria for Setting Water Connection Fees

VCs	Criteria for Setting Water
Beit ar-Rush al-Fouqa	Subscription Costs + Pipes
Beit Mirsim	.
Khirbit Beit Salema	Subscription Costs
Deir al'Asal atahta	Subscription Costs
Sikka Watwas	Subscription Costs
Deir al'Asal al Fouqa	.
Al-Majd	Subscription Costs
Ithna	Subscription Costs
Tarqumiya	Subscription Costs + Pipes
Beer Muslem	Subscription Costs
Al-Mawreq	Subscription Costs
Al-Kum	Subscription Costs
Beit Maqdum	Subscription Costs
Deir Samit	Subscription Costs
ES Simiya	Subscription Costs
Beit Awwa	Subscription Costs
Al-Burj	Subscription Costs

13. 58.5% of VCs answered that the collected fees did not cover their operating costs, as compared to 41.2% of VCs who answered that it did cover their operating costs, in the form of payment for water prices, and not taking into consideration the managerial and development costs.
14. Upon answering the question of what the collected fees covered, (Q51), 52.9% of VCs quoted depreciation as the main recipient of those fees, versus 11.8% for operational costs, and 17.7% for expanding the network. Upon discussing this question further with the VCs, it was obvious that their calculations for operating costs and network expansion are not done scientifically and is not reflecting a large component of the expenses. The majority of VCs are concerned about collecting water fees to pay for the suppliers, reflected in an inaccurate calculation for costing and development, and the absence of professional accountants in this area.
15. 86.6% of VCs collected payment directly, 6.6% through banks and 6.6% through the local municipalities. The rural communities in the cluster reflect this, where there are no banks found. In rural areas, the water collector goes door to door and collects the fees, and in the event the collector could not collect the fees, the head of the household paid the bill at the municipality.

16. The currency used in payment is the New Israeli Shekels (NIS), and in the event the payee wishes to use Jordanian Dinars for payment, they are transferred to NIS upon payment.
17. VCs prefer to have separate bills for water and sanitation, in anticipation to the future availability of sanitation services.

3. Local Markets

BASIC QUESTION: WHAT IS THE SIZE OF THE MARKETS FOR WATER AND SANITATION SERVICES IN THE VILLAGE?

1. ACCORDING TO THE STATISTIC COLLECTED, THE TOTAL NUMBER OF INHABITANTS IN THIS CLUSTER IS PLACED AT 55,658 PEOPLE.

Table 26: Cluster VCs Number of Population according to Questionnaire

Mean	3273.706
Minimum	250
Maximum	17000
Sum	55653

2. THE AVERAGE MONTHLY WATER CONSUMPTION IS 39882 CUBIC METERS DURING THE SUMMER, AND 28881 CUBIC METERS DURING THE WINTER, WHICH PLACES THE AVERAGE PER CAPITA DAILY CONSUMPTION AT 33.47 LITERS IN SUMMER AND 24.24 LITERS IN WINTER. THIS IS A VERY LOW PERCENTAGE IN TERMS OF MEETING DAILY NEEDS, AND AN AMOUNT DOUBLE OF THESE CONSUMPTION LEVELS IS NEEDED.

Table 27: Cluster VCs Summer/Winter Monthly Water Consumption (M3) - Questionnaire

Valid Responses	16	
Missing Responses	1	
	Average Consumption in Summer	Average Consumption in Winter
Mean	3982.25	2888.1875
Minimum	4	3
Maximum	21000	17000
Sum	63716	46211

3. IN REGARDS TO THE VC RECORDS FOR WATER COLLECTION, 20% OF VCS SAID THAT THEY HAD A POSITIVE AND ACCEPTABLE RECORD, WHILE 80% SAID THAT THEY HAD A POOR AND UNACCEPTABLE RECORD. 53.3% OF RESPONDENTS SAID THAT 50% OF WATER BILLS ARE COLLECTED, WHILE 46.6% PLACED THAT PERCENTAGE AT 50-70% COLLECTION RECORD.

4. THE AVERAGE FEES CHARGED FROM CONSUMERS PER CUBIC METER IS 5.5 NIS, WITH THE LOWEST CHARGE FOUND AT 3.5 NIS AND THE HIGHEST AT 10 NIS IN TARQUMIYA AND BEER MUSLEM.

5. THE MAJOR COMMUNITY SECTORS THAT BENEFITED FROM THE WATER SUPPLIES WERE THE HOUSEHOLDS, AS COMPARED TO INDUSTRY AND COMMERCE WHERE THEY GOT LITTLE IN TERMS OF PERCENTAGE AND QUANTITIES. THIS IS DUE TO THE FACT THAT THEY ARE SMALL COMMUNITIES AND, COMMERCE AND INDUSTRY ARE PRACTICALLY NON-EXISTENT.

Table 28: Cluster VCs Sectorial Water Consumption/ Questionnaire

Area	Sector	Connect to water meters	Consumption (M3)	non metered	Consumption (M3)
Beit ar-Rush al-Fouqa	Organization	4	40	1	5
Beit Mirsim	Households	35	700	10	100
Khirbit Beit Salema					
Deir al'Asal atahta					
Sikka Watwas					
Deir al'Asal al Fouqa					
Al-Majd					
Ithna					
Tarqumiya					
Beer Muslem					
Al-Mawreq					
Al-Kum					
Beit Maqdum					
Deir Samit					
ES Simiya					
Beit Awwa					
Al-Burj					

6. IN THE DIFFERENT COMMUNITIES, WATER SUPPLY SOURCES MAY COMBINE ONE OR MORE RESOURCES, 87.5% GOT THEIR WATER FROM WATER TANKERS, 68.7% FROM COLLECTION WELLS, AND 25% FROM WATER RESERVOIRS.

Table 29: Cluster VCs Sources of Water / Questionnaire

VCs	Collection Wells	Tankers
Beit ar-Rush al-Fouqa	.	.
Beit Mirsim	Yes	.
Khirbit Beit Salema	Yes	.
Deir al'Asal atahta	Yes	.
Sikka Watwas	Yes	.
Deir al'Asal al Fouqa	.	.
Al-Majd	.	.
Ithna	Yes	Yes
Tarqumiya	Yes	No
Beer Muslem	Yes	Yes
Al-Mawreq	Yes	.
Al-Kum	Yes	.
Beit Maqdum	Yes	.
Deir Samit	Yes	Yes
ES Simiya	Yes	No
Beit Awwa	Yes	.
Al-Burj	Yes	.

7. BUILDING A WATER COLLECTION WELL, COSTS LESS THAN 2000 NIS IN 18.7% OF THE VCS, AS COMPARED TO 2000-4000 NIS IN 12.5%, 4000-6000 NIS IN 25%, 6000-8000 NIS IN 25% AND MORE THAN 8000 NIS IN 18.7% OF THE VCS. THE AVERAGE WATER COLLECTION WELL COST IS 6000 NIS.

8. IN 82% OF THE CASES, THE AVERAGE SIZE OF A WATER COLLECTION WELL IS BETWEEN 40-80 CUBIC METERS, FOR TRYING TO COLLECT AS MUCH RAINWATER AS POSSIBLE. IN MANY INSTANCES, IT IS NOT EFFECTIVE, SINCE IT DEPENDS ON RAINFALL.

Table 30: Cluster VCs Average Cost and Size for Building Water Wells

VCs	Average Cost for Building a water well (NIS)	Average Size of Water Well (M3)
Beit ar-Rush al-Fouqa	.	.
Beit Mirsim	2000-4000	40-80
Khirbit Beit Salema	More than 8000	More than 8
Deir al'Asal atahta	2000-4000	40-80
Sikka Watwas	Less than 2000	40-80
Deir al'Asal al Fouqa	6000-8000	More than 8
Al-Majd	6000-8000	40-80
Ithna	Less than 2000	40-80
Tarqumiya	6000-8000	40-80
Beer Muslem	Less than 2000	40-80
Al-Mawreq	4000-6000	40-80
Al-Kum	4000-6000	40-80

Beit Maqdum	4000-6000	40-80
Deir Samit	More than 8000	40-80
ES Simiya	6000-8000	40-80
Beit Awwa	4000-6000	40-80
Al-Burj	More than 8000	More than 8

9. THE ANNUAL OPERATIONAL COSTS FOR MANAGING A WATER RESERVOIR OR WELL ARE 600 NIS, MATCHED BY A SIMILAR AMOUNT FOR MAINTAINING THE NETWORK, WHICH IS GENERALLY DONE ONCE A YEAR.

Table 31: Cluster VCs Average Annual Management and Maintenance Costs

VCs	Average Annual Management Costs (NIS)	Average Annual Maintenance Costs (NIS)
Beit ar-Rush al-Fouqa	.	.
Beit Mirsim	More then 600	200-400
Khirbit Beit Salema	.	400-600
Deir al'Asal atahta	More then 600	200-400
Sikka Watwas	.	.
Deir al'Asal al Fouqa	.	.
Al-Majd	.	200-400
Ithna	More then 600	600-800
Tarqumiya	400-600	200-400
Beer Muslem	More then 600	600-800
Al-Mawreq	400-600	600-800
Al-Kum	400-600	600-800
Beit Maqdum	400-600	600-800
Deir Samit	More then 600	600-800
ES Simiya	More then 600	600-800
Beit Awwa	More then 600	Less then 200
Al-Burj	.	.

IN TERMS OF A SANITATION NETWORK, IT IS NON-EXISTENT IN ANY OF THE VCS. SANITATION IS PERFORMED THROUGH CESSPITS AVAILABLE IN EACH HOUSEHOLD. AN AVERAGE 10 CUBIC METER CESSPIT COSTS 4000 NIS.

Table 31: Cluster VCs Average Cost and Size for Building Cesspits

VCs	Cost to Build a Cesspit (NIS)	Average Size of Cesspits (M3)
Beit ar-Rush al-Fouqa	.	.
Beit Mirsim	6000-8000	More than 20
Khirbit Beit Salema	4000-6000	More than 20
Deir al'Asal atahta	Less than 2000	10-20
Sikka Watwas	.	.
Deir al'Asal al Fouqa	2000-4000	10-20
Al-Majd	2000-4000	More than 20

Ithna	Less than 2000	More than 20
Tarqumiya	More than 8000	More than 20
Beer Muslem	Less than 2000	More than 20
Al-Mawreq	2000-4000	More than 20
Al-Kum	4000-6000	More than 20
Beit Maqdum	2000-4000	More than 20
Deir Samit	More than 8000	More than 20
ES Simiya	6000-8000	More than 20
Beit Awwa	2000-4000	More than 20
Al-Burj	4000-6000	More than 20

10. THE AVERAGE ANNUAL COSTS FOR PUMPING OUT CESSPITS ARE 600 NIS, WHICH IS DONE LESS THAN EVERY SIX MONTHS.

Table 32: Cluster VCs Average Annual Cost for Pumping Out Cesspits, and the Frequency of Pumping Out Cesspits

VCs	Average Annual Cost for Pumping Out Cesspits (NIS)	Frequency of Pumping Out Cesspits
Beit ar-Rush al-Fouqa	.	.
Beit Mirsim	200-400	Less than a year
Khirbit Beit Salema	.	Less than six months
Deir al'Asal atahta	200-400	Less than six months
Sikka Watwas	.	.
Deir al'Asal al Fouqa	400-600	Less than six months
Al-Majd	200-400	Less than three months
Ithna	600-800	Less than six months
Tarqumiya	200-400	Less than six months
Beer Muslem	600-800	Less than six months
Al-Mawreq	600-800	Less than a year
Al-Kum	600-800	Less than a year
Beit Maqdum	600-800	Less than a year
Deir Samit	600-800	Less than six months
ES Simiya	600-800	Less than six months
Beit Awwa	200-400	Less than six months
Al-Burj	400-600	Less than six months

Table 33: JSC - Hebron Southwest

Projected Income Statement

	2004	2005	2006	2007	2008
Water Billing	2,535	2,799	3,009	3,193	3,347
Cost of Bulk Water	(1,316)	(1,454)	(1,563)	(1,658)	(1,738)
Uncollectibles **(2)**	(254)	(280)	(301)	(319)	(335)
Net Water Billing	**965**	**1,066**	**1,146**	**1,216**	**1,274**
Connection fees **(3)**	422	277	220	193	161
Total Net Revenue	**1,387**	**1,343**	**1,366**	**1,409**	**1,435**
Operation & Management Costs **(4)**	(1,326)	(1,366)	(1,407)	(1,449)	(1,493)

Total O&M Costs	**(1,326)**	**(1,366)**	**(1,407)**	**(1,449)**	**(1,493)**
Net Profit	**61**	**(23)**	**(41)**	**(41)**	**(57)**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).
(2) Estimated at 10% of water billing.
(3) Connection fees at NIS 720/connection.
(4) Assuming an inflation rate of 3% per year.

Table 34: JSC – Hebron Southwest
Projected Balance Sheet

Assets	**2004**	**2005**	**2006**	**2007**	**2008**
Cash and Cash at Banks	1,059	1,460	1,848	2,240	2,619
Accounts Receivable (25% of net water billing)	241	266	286	304	319
Total Current Assets	***1,300***	***1,727***	***2,135***	***2,544***	***2,938***
Total Fixed Assets **(2)**	20,818	21,026	21,236	21,449	21,663
Accumulated Depreciation	(625)	(1,255)	(1,892)	(2,536)	(3,186)
Net Fixed Assets	***20,193***	***19,771***	***19,344***	***18,913***	***18,478***
Total Assets	**21,493**	**21,498**	**21,479**	**21,457**	**21,416**
Liabilities & Capital					
Accounts Payable (20% of cost of bulk water)	263	291	313	332	348
Retained Earnings (Cumulative Net Profit)	61	38	(3)	(44)	(101)
Capital	21,169	21,169	21,169	21,169	21,169
Total Liabilities & Capital	**21,493**	**21,498**	**21,479**	**21,457**	**21,416**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).
(2) Assuming a 1% increase in fixed assets in the years 2005 - 2008, to be paid by the JSC.

Table 35: JSC – Hebron Southwest
Projected Cash-Flow Statement

	2004	**2005**	**2006**	**2007**	**2008**
Net Profit	61	(23)	(41)	(41)	(57)
Add: Depreciation	625	631	637	643	650
(Increase)/Decrease in Accounts Receivable	(241)	(25)	(20)	(17)	(15)
(Increase)/Decrease in Total Fixed Assets	-	(209)	(210)	(212)	(215)
(Decrease)/Increase in Accounts Payable	263	27	22	19	16
Net Cash from Operations	**708**	**401**	**388**	**392**	**379**

Initial Cash	351	1059	1460	1848	2240
End Cash Balance	**1059**	**1460**	**1848**	**2240**	**2619**

(1) All amounts are in Thousand New Israeli Shekels (NIS 000).

ANNEX 5

Data Collection Instruments

INSTITUTIONAL ASSESSMENT The questions determining institutional capability were broken down into seven areas: legal policy issues; feasibility of JSC/local issues; existing capacity; existing system; sectoral issues (conflicts with planned or existing water and sanitation systems); public consultation and participation; and institutional

risks. Many of the initial questions meant to assess the different social and political environments, and to determine how conducive these issues are to the formation of the JSCs. The related questions stemming from those basic issues follow specific issues in each category that might indicate problems or additional challenges to the JSCs. Many of the questions related to existing infrastructure and how it might relate to the JSCs.

(i) Legal/policy issues

General issue*: Are the legal and policy environments conducive to the satisfactory implementation of the project and to the sustainability of the Joint Service Councils (JSCs)?*

Related questions:

- What legal and policy issues related to the Joint Service Councils must be addressed to ensure their efficacy?
- Are there relationships with other entities (i.e., entities responsible for the management of water sources and transmission lines) that could be problematic?
- Should the Jenin JSC model be modified?
- How will the Board of Directors function? What governance issues related to establishment of the Board of Directors need to be addressed?

(ii) Feasibility of the JSC/Local Issues

General issue: *Are conditions favorable in the village for joining the proposed JSC?*

Related questions:

- Is the village interested in participating?
- Does adequate leadership exist to form the JSC?
- Is there good cooperation among the villages to establish the JSC?
- Do the Ministry of Local Government and the Palestinian Water Authority support creating a JSC?

(iii) Existing capacity

General issue*: What human and physical resources are available in the village to facilitate the management of the JSC and the provision of the water and sewerage services?*

Related questions:

- What about resources for commercialization and administration?
- What resources for operations and maintenance?
- What physical resources are available?
- What buildings?
- What equipment?

(iv) Existing systems

General issue*: Are there existing management systems for water supply and sanitation that can be used as starting point for the JSC? (Examples: operation and maintenance, accounting, purchasing)*

(v) Water Sectoral issues

General issue*: Are there issues outside the control of the project and of JSC authorities that can have any positive or negative effect on the success of the project and the long-term sustainability of the JSC?*

Related questions:

- Are there other ongoing or proposed water and sewerage projects in the village?
- Are there other entities providing water and sanitation services in the village?
- How will the establishment of the proposed regional utilities affect the JSC?
- Are there adequate water supply sources for the village?
- Do the prices of bulk water reflect the cost of supplying it and are there adequate guarantees of stability of these prices in real terms?

(vi) Public consultation and participation

General issue*: Does anyone in the villages have experience with consultation and participatory approaches that can be applied to project implementation and to the operation of the JSC?*

Related questions

- Describe recent experiences in community participation in the village and analyze its relevance for the JSC.
- Describe recent experiences in public consultation in the village and analyze its relevance for the JSC.
- Describe recent experiences in public awareness programs in the village and analyze its relevance for the JSC.

(vii) Institutional risks

General issue*: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?*

FINANCIAL ASSESSMENT Local financial capability was determined based on assessment of seven factors: tariff policy and subsidies; current market; cost of JSC services; financial market; financial projections; and financial and commercial risks. The implications related to the different basic questions are listed below. These finance questions sought to determine if there were foreseeable obstacles to local payment of

water service fees, and if the revenue would be sufficient to cover operating costs over a long term period.

(i) Tariff policy and subsidies

General issue*: Are the current tariff and subsidy policies consistent with the requirements of the project and of the long-term financial viability of the JSCs?*

Related questions:

- Does the policy for setting tariffs allow for levels that recover recurrent costs and help to finance investments in systems expansion?
- Are there any policy issues that affect affordability, such as the use of cross subsidies from water supply to wastewater?
- Are there in place legislation and practices which allow water and sewerage entities to enforce bill collection? (Examples: adequate legal procedures, disconnection of services?)

(ii) Current market

General issue*: What is the size of the market for water and sanitation services in the village?*

Related questions:

- Size of the market at present and seasonal variations in water consumption
- Current cost of water and sanitation services to the consumer

(iii) Cost of JCS services

General issue*: What is the cost of providing the services?*

Related questions:

- What are the estimated start-up costs of the JSCs?
- What are the estimated recurrent costs of the JSCs?

(iv) Projected market

General issue*: Will the tariff levels required to cover JCS costs be affordable?*

Related questions:

- Size of the projected market and seasonal variations in water consumption
- Estimated range of tariffs
- Estimated range and affordability of connection fees

(v) Financial projections

General issue*: Is the JSC a financially self-sustainable enterprise able to generate sufficient revenues to adequately operate and maintain the infrastructure and to provide services to the growing population in the service area?*

Related questions:

- Prepare the estimated balance statement of the JCS at the beginning of its operations. Indicate the sources of funds to cover the start-up costs.
- Prepare financial projections (balance statements, income statements and cash-flows) for the first five years of operations of the JCS
- Specify the main assumptions supporting the financial projections (Examples: number of connections, volume of water sold per connection and per capita, volume of water produced or purchased, cash collection as a percentage of total revenues, operating costs)

(vi) Financial and commercial risks

General issue*: Are there risks that jeopardize the implementation of the project or the viability of the JSC, and are there actions that can be taken to mitigate these risks?*

Annex 7

Names of Village Councils Representatives
Attending the
Plenary Session Held at the Aqraba Municipality
On November 19, 2001

No.	Name	City/Village	*Position*	Telephone No.	Cellular No.	Fax
1.	Adel Al Qadi	***Awarta***	Deputy mayor	2595070	052-344013	-
2.	Ayed Kamal Youssef	Madama	Head of Village Council	259207	-	-
3.	Tarek Abu Jamous	Jourish	Member of Village Council	-	052-664124	-
4.	Faleh Salem Awwad	Jourish	Member of Village Council	-	-	-
5.	Fahmi Mohammed Hassan	Jourish	Head of Village Council	052-46419	-	-
6.	Fawzi Allan	Einabous	Deputy Village Council	052-72198	-	-
7.	Ali Issa Darawsheh	Awarta	Member of Village Council	2590190	-	-
8.	Youssef Za'al Sal'ous	Majdal Bani Fadel	Member of Village Council	-	052-601142	-
9.	Tawfiq Mohammed Hamed	Majdal Bani Fadel	Member of Village Council	2526030	-	-
10.	Sa'ed Youssef Ahmad Awwad	Awarta	Member of Village Counci	2595111	052-344013	-
11.	Irsan Ibrahim Najjar	Bourin	Head of Village Council	2599012/3	059-348341	-
12.	Mahmoud Mohammed Fayed	Duma	Head of Village Council	-	052-948668	-
13.	Fouad Darawsheh	Duma	Member of Village Council	050-762429	09-2526523	-
14.	Abdel Basset Khaled	Aqraba	Deputy Mayor	-	-	-
15.	Nafez Mahmoud Hulail Rashdan	Einabous	Head of Einabous Village Council	052-314586	092-592048	-
16.	Fawzi	Ourif	Member of	-	052-	

	Mahmoud Khalil Shhadeh		Village Council		714603	

No.	Name	City/Village	Position	Telephone No.	Cellular No.	Fax
17.	Kamal Al Nimer	CCE	Civil researcher at CCE	2375497	-	-
18.	Bassel Iskandar	CCE	Civil researcher at CCE	09-237618	059-649530	-
19.	Shakour Al Bitar	EHP/CDM	Deputy Chief of Party	2406155	052-383752	2405154
20.	Jamal Al-Aref	Jerusalem	ANERA Middle East Deputy Representative	6277076	050-469261	6264351
21.	Adnan Obeidat	Halhul	Director of Halhul Office	2213704	050-545797	2213703
22.	Diana Anani	Halhul	Child & Youth Specialist	2213704	050-533419	-
23.	Jubran Said	Jerusalem	Site Engineer – ANERA	6277076	050-518923	6264351
24.	Hussni Sharif Abdul Jawwad	Aseera Al-Qabaliya	Treasurer	2599302	-	-
25.	Mohammed Ra'ouf Assara	Aseera Al-Qabaliya	Head of Village Council	2599802	059-206335	-
26.	Abdul Karim Omar Abdallah	Aseera Al-Qabaliya	Member of Village Council	-	-	-
27.	Mufeed Jamil Jaber	Qaryout	Head of Village Council	2525595	059-72689?	2525590
28.	Mohammed Ya'coub	Jaloud	Member of Village Council	20257221	-	-

Names of Village Councils Representatives
Attending the
Plenary Session Held at the Halhul Municipality
On November 21, 2001

No.	Name	City/Village	*Position*	Telephone No.	Cellular No.	Fax
1.	Mohammed Abdul Ruhman Al Ja'afrah	***Tarqumia***	Mayor	2584863	050-489240	-
2.	Mohammed Ahmad Qabajeh	Tarqumia	Municipality Engineer	2584863	-	-
3.	Adnan Youssef Amr	Beit Mursem	Secretary	-	050-222254	-
4.	Eng. Mustafa Ismail Amr	Beit Al Rosh Al Tahta	Deputy Director	2200772	-	-
5.	Ahmad Youssef Zare' Amr	Beit Mursem	Municipality Member	-	050-623224	-
6.	Issa Moussa Adwan	Ministry of Environment	General Director - Environment Dept.	2225328	059-582647	-
7.	Hashem Salah	Ministry of Environment	Director of the Hebron Office	2229269	-	2229279
8.	Imad Al Baba	Ministry of Environment	Director of Studies & Research	2229269	-	2229279
9.	Eng. Waleed Halayka	Ministry of Env. Affairs	General Director of Environment Dept.	2403495	-	2403494
10.	Rateb Al Hatabeh	Halhul Municipality	Head of the Water Department	2228167	-	2227666
11.	Rasheed Awad	Beit Umar Municipality	Mayor	2520035	-	2520275
12.	Thaher Safi	PWA	Coordinator	2766101	-	2766106
13.	Jamal Itmeizi	Municipality of Ethna	Mayor	2256002	059-653084	-

14.	Ammar Attallah	Municipality of Ethna	Municipality Engineer	2256002	052-421086	-
15.	Awni Al Faqeyat	Al Burj Village Council	Head of Village Council	2201250	059-735532	-
16.	Majed Ihshayesh	Sikkah Village Council	Head of Village Council	2200144	059-735532	-

No.	Name	City/Village	Position	Telephone No.	Cellular No.	Fax
17.	Asa'd Al Qadi	Sourif	Municipality staff	2523001	-	2523002
18.	Mohammed Moussa Al Amleh	Beit Ulla	Mayor	2581004	-	2581551
19.	Abdul Fattah Hmeidat	Sourif	Municipality Engineer	2523001	-	2523002
20.	Mohammed Khalil Adwan	Sourif	Mayor	2523001		2523002
21.	Issa Mahmoud Abu Al Jaraysh	Kharas	Mayor	2586111	-	2586111
22.	Moussa Abdul Azeem Afani	Kharas	Member of Village Council	2586111	-	2586111
23.	Eng. Mohammad Abu Rajab	Hebron	Engineer	2228112	-	-
24.	Hassan Salameh Abu Zmeid	Deir Samet	Member of Village Council	2202222	-	-
25.	Louis O'Brien	Ramallah	COP/EHP Project	2405154	050-479212	-
26.	Shakkour Al Bitar	Ramallah	EHP/Deputy Director	2405154	052-383752	-
27.	Naim Al Mani	PWA	Technical Advisor	2766106	052-289733	-
28.	Issa Attalah	PWA	Coord Inator	2766106	057-691725	-
29.	Ibrahim Mahmoud Farajallah	Bir Zeit/CCE	Staff member	2217102	052-629351	-
30.	Omar Nasr	Deir al-Assal	Head of Village	2200555	-	2200808

		al Tahta	Council			
31.	Ya'coub Salem Drous	Al Kom	Deputy Village Council	2202344	-	2202344
32.	Younes Mahmoud AL-Awawdeh	Al Kom	Secretary of Village Council	2202344	-	2202344
33.	Adnan Najjar	Yata	Civil engineer	22233311	-	2229979
34.	Ammad Saadi	Halhul	GEKA Halhul Manager	2223311	-	2229979
35.	Mahmoud Abed Mahmoud	Deir Samet	Head of Village Council	2202222	-	2202222
No.	Name	City/Village	Position	Telephone No.	Cellular No.	Fax
36.	Mohammad Ibrahim Abu Khoussa	Jala	Head of the Committee	-	052-212486	-
37.	Rizek Mustafa Sweiti	Beit Awwa	Mayor	2200005	059-204686	-
38.	Adnan Obeidat	Halhul	Director of ANERA Office/Halhul	2213704	050-545797	2213703
39.	Jamal Al-Aref	Jerusalem	Deputy Representative ANERA	6277076	050-469261	6264351
40.	Sarah Jessup	Jerusalem	Researcher/ANERA	6277076	-	6264351
41.	Jubran Said	Jerusalem	Site Engineer/ANERA	6277076	050-518923	6264351
42.	Dr. Abdel Fattah Ahmad Al Shamleh	Bir Zeit U. CCE	Team leader	22533218	055-854044	2253218